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Archives of Dermatology and Syphilology

VOLUME 62 SEPTEMBER 1950 NUMBER 3

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SCIENTIFIC WORK OF PAUL GERSON UNNA

In Commemoration of the One Hundredth Anniversary of His Birth

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ON SEPT. 8, 1950, one hundred years will have passed since Paul Gerson Unna, one of the great dermatologic masters, was born. This date is most appropriate for the honoring of the memory of a great genius who, through his fundamental and elaborate work, helped to build a safe and lasting foundation for the recognition of dermatology within medical science and who, through his painstaking studies, made many important contributions to the specialty.

It will be to Unna's everlasting credit to have been the first dermatologist who, from the beginning of his career, tried to link together clinical aspects, etiology, histology and therapy of skin diseases. He was the founder of dermatology as a branch of the exact natural sciences and the creator of modern dermatopathology and dermatotherapy. He early recognized that only a biologic conception of skin diseases could lead to real dermatologic science.

Although many of the discoveries and theories advanced by Unna in his early work could not withstand later criticisms, it was he who through his continuous efforts stirred up interest in a neglected field of medicine and who through his original contributions induced others to new studies and to the bringing about of corrections and perfections of his work.

Unna's first important contribution was his "Entwicklungsgeschichte und Anatomie der Haut" in Ziemssen's "Handbuch der speciellen Pathologie und Therapie."[1] This contribution as well as his dissertation, entitled "Beiträge zur Histologie und Entwicklungsgeschichte der menschlichen Oberhaut und ihrer Anhangsgebilde"[2]—the latter being his first publication—brought fundamental descriptions of the different elements of the skin. He described in detail the stratum corneum and

1. Unna, P. G.: Entwicklungsgeschichte und Anatomie der Haut, in von Ziemssen, H.: Handbuch der speciellen Pathologie und Therapie, Leipzig, F. C. W. Vogel, 1882, vol. 14, pt. 1.

2. Unna, P. G.: Beiträge zur Histologie und Entwicklungsgeschichte der menschlichen Oberhaut und ihrer Anhangsgebilde, Bonn, C. Georgi, 1876.

its differentiation into three layers. He stated that the basal cell layer of the epidermis is the regenerating layer and that the stratum spinosum does not participate in the regeneration. He introduced the definitions of stratum spinosum and stratum granulosum. He made the claim that the stratum lucidum constitutes the basal horny layer.

Unna's most famous work was "Die Histopathologie der Hautkrankheiten," [3] of which an English translation was published by Norman Walker.[4] An essential complement was the "Histologischer Atlas zur Pathologie der Haut." [5] This book was a tremendous piece of work written within five years by one man and principally based on his own work in his clinic and practice. In considering its value we must remember that there had been only one book on the pathologic anatomy of the skin previously published, by Gustav Simon in 1848.

It is worth while to review shortly the preface to Unna's "Histopathology." [3] Some of his statements could have been written at the present time, statements which explain the thoroughness with which he started and finished all his studies. He wrote of the advantage which the dermatologist possesses in examining the skin. He is able to examine the live object with the naked eye before he excises the needed skin specimen. This fortunate position imposes special duties. He must compare all details of clinical and histologic findings, and he must not cease work until both macroscopic and microscopic pathology of the skin form a harmonious entity. A profound study of skin pathology should be beneficial in the study of general pathology. All theories on inflammation and tumors originated from studies of diseases of the skin and will always have to rely on a careful study of skin processes since these can always be easily examined. The time will and must come when in the study of a questionable disease of internal organs an analogous, better known skin disease which is amenable to clinical observation will be used for comparative study.

Unna especially mentioned the difficulties which he had to surmount as far as the tinctorial methods known at the time were concerned. In order to be able to examine the minute structure of the skin tissue he had to find new staining methods, since principally nuclear stains had been used previously. He created new specific staining methods for the protoplasm and the different intercellular substances of the corium,

3. Unna, P. G.: Die Histopathologie der Hautkrankheiten, in Orth, J.: Lehrbuch der speciellen pathologischen Anatomie, Berlin, A. Hirschwald, 1894, vol. 8.

4. Unna, P. G.: The Histopathology of the Diseases of the Skin, translated from the German with the assistance of the author by Norman Walker, New York, Macmillan & Co., 1896.

5. Unna, P. G.: Histologischer Atlas zur Pathologie der Haut, Hamburg, L. Voss, 1897-1910.

of which we know about one hundred different formulas.[6] He expressed preference for alcohol as a fixative since he considered it the best for dermatologic purposes.

It was impossible for Unna really to finish the colossal task within five years, the time he was given to complete the "Histopathology of the Skin." But he preferred to commence the work, as he expressed himself, to give directions and impetus for future studies instead of just relying on previous studies of others and to give a review of the still more incomplete work of the past epoch of dermatology.

It is not intended and would also be impossible to be the purpose of this paper for me to discuss every chapter of the "Histopathology" or to review critically all or most of Unna's papers. It must be remembered that during the time of his writing the "Histopathology" he discovered plasma cells, nevus cells, degenerative products of collagen and elastin, acanthosis, spongiosis and ballooning and reticular degeneration in vesicular dermatoses.

The chapter on nevi,[3] with his definition of the nevus group, the division into soft, hard and mixed, hair, giant and linear nevi and the description of the *"Abtropfung"* of the nevus cells, will always remain a classic scientific contribution.

Commencing in 1885, Unna made important contributions to the bacteriology, pathology, and therapy of leprosy. In 1884 he had visited the leprosaria of Norway and had met Armauer Hansen, the discoverer of the lepra bacillus, and the great Norwegian dermatologists Danielssen and Caesar Boeck. One of Unna's clinic buildings was reserved particularly for leprosy patients who came from South America. Already in 1885 he tried to prove that the leprosy cells which Virchow had originally described and which Neisser had expressed the belief were cells filled with lepra bacilli and specific for leprosy were no cells but clumps of bacilli embedded in mucin and surrounded by atrophic connective tissue cells.

His "Histotechnik der leprösen Haut"[7] dealt with the staining of the lepra bacillus, its coccothrix form, the leprous tissue and the combined staining of bacillus and tissue and described thirty new staining methods. Unna used his *"Hackmethode"* for the isolation of the lepra bacillus. A fresh leproma is cut into very small pieces with the razor and further prepared. Material of this kind shows an abundance

6. Unna, P. G., and Unna, P.: P. G. Unna's Färbemethoden, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1929, vol. 1, pt. 2, p. 575.

7. Unna, P. G.: Histotechnik der leprösen Haut, Hamburg and Leipzig, L. Voss, 1910.

of bacilli free from other micro-organisms and leukocytes and is highly suitable for detailed study of the lepra bacillus. On the basis of careful histologic studies, Unna expressed belief in the possibility of a cure of leprosy although he did not overlook the fact that internal organs which could not be treated successfully with methods known at that time were also affected. He also fought against bacillary phobia in leprosy, since he stated the opinion that the lepra bacillus alone could not constitute the only dangerous factor of infection. He expressed belief that several factors must be blamed for the infection with leprosy: Mycobacterium leprae, improper hygienic conditions and trauma. In this connection it might be worth while mentioning that in an interesting paper [7a] he proved that *"Zaraath,"* the disease described in the Bible, was not leprosy but was just a collective conception of disease comparable to the taboo of primitive peoples.

It should not be forgotten that in 1895 Unna demonstrated the streptobacillus of chancroid in tissue preparations. This observation, as well as his discovery of the characteristic appearance of the bacillus in chains inside the tissue, corroborated the etiologic significance of Ducrey's discovery of the streptobacillus in pus from chancroid and established the value of the microscopic diagnosis of chancroid.

Unna did not neglect clinical dermatology in spite of his histopathologic work. He wrote fundamental articles about the impetigos, the lichen group, nail diseases, the ulerythema group, cutis verticis gyrata, parakeratosis scutularis, parakeratosis variegata, acanthosis nigricans, urticaria pigmentosa, purpura senilis and seborrheic eczema. He described the clinical picture of the last-mentioned disease so well that his description and the name seborrheic eczema were generally accepted and recognized.[8]

In evaluating Unna's work one cannot overlook all his therapeutic contributions. He wrote several monographs besides his many (about one hundred and fifty) therapeutic papers: "Die allgemeine Therapie der Hautkrankheiten," [9] "Die Diagnose und Behandlung von Hautkrankheiten durch den praktischen Arzt" [10] and "Die Kriegsaphorismen

7a. Unna, P. G.: Ein typischer Fall von Papierwissenschaft, Munich, Monist. Jahrhundert, 1912, nos. 16-18.

8. (*a*) Unna, P. G.: Pathologie und Therapie des Ekzems, Vienna, A. Hölder, 1903. (*b*) Unna, P. G., and Winkler, F.: Das seborrhoische Ekzem, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 6, pt. 1, p. 446.

9. Unna, P. G.: Allgemeine Therapie der Hautkrankheiten, in Eulenburg, A., and Samuel, S.: Lehrbuch der allgemeinen therapeutischen Methodik, Berlin, Urban & Schwarzenberg, 1899.

10. Unna, P. G.: Die Diagnose und Behandlung von Hautkrankheiten durch den praktischen Arzt, in Deutsche Klin. **10**(pt. 2):1, 1905.

eines Dermatologen."[11] In all his therapeutic endeavor he found the cooperation of genial men in the field of pharmacology, pharmaceutic practice and chemical industry, who enabled him to enrich the dermatologic formulary. Unna recognized that in no other specialty but dermatology can a great number of effective therapeutic indications be definitely established since all disease symptoms necessary for thorough study can be observed freely. He stated that in the future the skin integument will be of greater value for all our studies than animal experiments used almost exclusively at the end of the nineteenth century. He urgently asked all pharmacologists to rely more than ever on the dermatotherapeutic experiment. A general therapy of skin diseases must lay down rules about certain relations between medications and the individual patient, anatomic elements and organs, their different physiologic functions and the pathologic conditions of the skin. The different processes must be studied from the point of view of histology, physiologic physics and chemistry, pharmacology and bacteriology. Such studies make it possible for one to find a clue to causation in the connection between the disease and the medication used. Unna already recognized the important protective function of the skin. In order to achieve their absorption, the stratum corneum must abandon a part of this function when it is exposed to medicaments. Only the diseased epidermis possesses an absorptive function, which is of greatest value for the success of the treatment. In his "Allgemeine Therapie der Hautkrankheiten,"[9] Unna described in detail therapeutic indications for the skin as a whole, the epidermis and its different elements, the cutis and the subcutis.

Unna must be considered the master of skin therapy. As early as 1884 he found that the content of water added to ointments is the principal factor in creating a cooling effect on the skin. In the course of many years he made known many therapeutic formulas, the most important ones to be found in his formulae magistrales.

In 1907 Unna introduced eucerin® as a new ointment base capable of incorporating a great amount of water or other liquids and thus becoming an excellent cooling ointment. The introduction of eucerin® was based on Lifschütz' observations that the hydrophilic quality of wool fat is not due to its content of cholesterol esters but to its alcohol fraction 2c. Eucerin,® also known as aquaphor,® consists of a mixture of the alcohol fraction 2c of metacholesterols and hydrocarbons.

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11. Unna, P. G.: Die Kriegsaphorismen eines Dermatologen, ed. 2, Berlin, A. Hirschwald, 1917.

Almost at the same time that Oscar Lassar made known his paste, now well known as Lassar's paste (zinc oxide paste with salicylic acid N. F.), Unna introduced his zinc paste consisting of siliceous earth, 5 per cent; zinc oxide, 25 per cent; oil of benzoin, 10 per cent, and benzoinated lard, 60 per cent, which fulfils the requirements of a real paste to spread quickly and easily on the skin and, because of the addition of siliceous earth, to form a fast drying and adherent film. Unna contributed the medicinal glycerin-gelatin mixture which is used in the treatment of varicose ulcers and pruritic dermatoses. This mixture has a drying and cooling effect, and its continuous slight pressure on the skin has a definite antipruritic effect.

Unna's name must also be mentioned in connection with the use of medicinal soaps. With the help of a soap manufacturer and the apothecaries Beiersdorf and Mielck, he introduced the superfatted soaps into which different medicaments (ichthammol [ichthyol®], salicylic acid, sulfur, tar, mercury bichloride, phenol, betanaphthol, resorcinol and others) can be incorporated. He expressed the belief that after a superfatted soap had been used often or over a long period the skin was not subject to a defatting action of the soap. He named this superfatted soap basis soap.®

Unna fostered the original English idea of using properly colored ointments and pastes for hands and face, and his pulvis cuticolor containing Armenian bole should be especially mentioned as an excellent example of a cosmetic powder. Pharmaceutic and cosmetic industries as well utilized Unna's formulas in later years to furnish many skin preparations suitable for cosmetic purposes.

Unna studied the effect of the so-called reducing agents chrysarobin, pyrogallol, resorcinol, naphthalan, sulfur, tar and ichthammol on the skin. He distinguished between their action on nondamaged and damaged skin and on parasites within the skin. Their effect depends on their strength. Weak doses decrease redness, swelling and pain; strong doses cause redness, swelling, vesiculation and softening of the collagenous tissue, and they usually cause pain and, to a lesser extent, itching. Weak and strong doses may cause dramatically different results. Dry, anemic skin tissue tolerates strong doses without any harm, whereas hyperemic tissue must first be treated with weak reducing agents since strong doses would cause suppuration. The reducing agents have a definite antiparasitic effect. In this connection it will be of interest to mention the discovery of ichthammol. It was originally brought to Hamburg by a school teacher, Rudolf Schröter, from a vacation trip to the Austrian Tyrol. Schröter found the tarlike substance which Tyrolean peasants used for treating the mange of their sheep. He treated the substance with concentrated sulfuric acid, which treatment made the preparation

water soluble, and neutralized the product with sodium hydroxide. There resulted a clear brown, water-soluble liquid with a peculiar odor, which received its name because of fossil imprints Schröter had found on the accompanying stone of the bituminous slate.

Unna stated that as a reducing agent resorcinol should be placed between sulfur and ichthammol on one side and pyrogallol and chrysarobin on the other side. It shares its vast usefulness in inflammatory diseases with sulfur and ichthammol, whereas it shares its effectiveness in stubborn, very indolent skin diseases with pyrogallol and chrysarobin without having the harmful side effects of the latter. Resorcinol is the best and most convenient peeling medicament of the skin. As early as 1882 Unna found that salicylic acid in sufficient concentration is capable of peeling off the stratum corneum without pain. He showed that salicylic acid is an effective agent in the treatment of hyperkeratoses, and for this purpose he introduced salicylic acid plaster.

He also studied intensively some derivatives of the anthracenes, anthranols and anthrones. One member of this group, anthralin (cignolin®), also a reducing agent, distinguishes itself, together with chrysarobin, from ichthammol, resorcinol and pyrogallol by the 1 and 8 positions of two OH groups, which are responsible for the specific effect in treatment of psoriasis.

Although Unna's "Pathologie und Therapie des Ekzems" [8a] appeared forty-seven years ago, reading the clinical descriptions of all forms of eczema and especially of the different forms of seborrheic eczema, rosacea seborrheica, alopecia seborrheica and eczema pruriginosum is still worth while. The chapter on the history of eczema is a masterpiece of writing. The concept of Aetius (a Greek physician of the sixth century B.C.), that eczema is a "furuncle or carbuncle like burning hot and dry" and not an itching or oozing eruption, was accepted as correct until the end of the eighteenth century, when Willan gave a new, clear definition. Since that time the term eczema has not disappeared from the literature. Willan gave the name to all cases of acute traumatic inflammation of the skin showing a great deal of small nonitching vesicles which disappear spontaneously as soon as the effect of the harmful causative agent ceases. Unna gave a critical review of how the different English, French and German authors of the first half of the nineteenth century dealt with the eczema chapter and how the term eczema was differently interpreted by the French dermatologists Bazin and Hardy, as adherents of arthritism and herpetism, and Devergie, who rejected the doctrine of an eczema diathesis. About the same time, F. von Hebra published his textbook in which he described the croton oil dermatitis and five different forms of eczema (vesiculosum, rubrum

[madidans], impetiginosum [crustosum], papulosum and squamosum). Although Hebra recognized external chemical causes as etiologic factors and physical causes "under special conditions" only, he already stated not only that eczema is caused by a local irritative factor but also that certain internal diseases (menstrual anomalies, chlorosis, hysteria, pregnancy, sterility and the climacterium) could be conditioned causes of eczema (disposition). Unna stressed that the French dermatologist Rayer was the founder of the modern conception of eczema. Rayer gave an accurate clinical description of eczema of various parts of the body and excluded the artificially caused vesicular inflammation of the skin previously included in the eczema group by Willan. Rayer was already of the opinion that the artificial inflammation of the skin heals quickly and can thus be distinguished from the stubborn, frequently recurring eczema. Unna stated the belief that all forms of artificial dermatitis should be described exactly as to clinical aspects, histology, pathology and pharmacodynamics. Rayer's eczema must be studied carefully from clinical, histologic and etiologic viewpoints. Unna expressed the opinion that it was best to accept the classification of a uniform disease "eczema" and to differentiate various forms. Future studies would have to show whether or not it would be justified to consider each variety an independent form of eczema. Unna gave the following definition for eczema:

"A chronic itching and squamous bacterial disease of the epidermis with a tendency to diffuse spreading which can respond to irritation with serofibrinous exudation (oozing form) or with acanthosis, hyperkeratosis, abnormal content of fat or combinations of all these processes (dry form)."

As may be learned from this definition, Unna believed in the bacterial etiology of eczema. In his "Pathologie und Therapie des Ekzems" [8a] he also described in detail the general therapy of eczema and the various types of seborrheic eczema. He expressed the opinion that seborrheic eczema is a special type of eczema presenting its own clinical picture, histology and probably, too, etiology. He did not accept Crocker's definition of "seborrheic dermatitis" since he stated the belief that seborrheic eczema is a true eczema and constitutes the most important of all forms of eczema. From the bacteriologic findings he concluded that several types of bacilli must be considered etiologically: the morococcus, the bottle bacillus and the microbacillus of seborrhea. Seborrheic eczema deserves a special position histologically; the appearance of a sudanophilic substance in the form of droplets and granules in the parakeratotic horny layer of the epidermis is the most striking observation. An important clinical peculiarity characteristic of all forms of

seborrheic eczema is the dryness of the eruption. Oozing speaks against the diagnosis in most of the cases, although seborrheic lesions of the flexor aspect of the joints, of the retroauricular region and of the scrotum show oozing at times. Oozing is a secondary symptom usually caused by chemical and mechanical irritation (treatment, woolen clothing). Another peculiarity is the fact that seborrheic eczema does not lead to intense pruritus. Pruritus is usually found if another form of eczema develops in addition to an already existing seborrheic eczema. In those cases inflammatory redness, sensitivity to touch, oozing and consequently considerable crusting can be observed. Intense pruritus also develops if seborrheic eczema turns into callous eczema on certain sites of predilection such as the dorsum and the palm of the hand, the forearm, the cubital and popliteal spaces, the malleolar region of the leg, the sole and sometimes the face. This callous eczema should not be mistaken for lichenified eczema or circumscribed neurodermatitis. In discussing eczema seborrheicum psoriasiforme, Unna expressed the opinion that in almost every case a single efflorescence can be seen which fulfils with regard to dryness, air content, silvery brightness and bleeding points all requirements of a typical psoriasis papule. The psoriasiform variety can also develop into an oozing, crusted and intertriginous type especially on the scalp, behind the ears, in the genital and mammary regions and on the leg. In these cases the change into an oozing eczema remains limited to some regions and efflorescences and the origin of the oozing eczema from the primary psoriasiform seborrheic eczema is not doubtful at all.

After 1906 Unna also occupied himself with biochemical work. In collaboration with his chemist Golodetz he proved that all keratin elements of the skin (stratum corneum, nails and hair) consist of three different keratins, A, B and C, which can be distinguished by the reaction to fuming nitric acid and by the xanthroprotein reaction.

His publications on "Sauerstofforte und Reduktionsorte,"[12] "Biochemie der Haut,"[13] "Die Lebensvorgänge in der Haut,"[14] and "Die Histochemie der Haut"[15] are proof of his painstaking studies on the cellular chemistry of the skin. Since the histochemical work is based on his difficult and time-consuming methods, it was never thoroughly

12. Unna, P. G.: Chromolyse. Sauerstofforte und Reduktionsorte, in Abderhalden, E.: Handbuch der biologischen Arbeitsmethoden, Berlin, Urban & Schwarzenberg, 1921, sect. 5, pt. 2.

13. Unna, P. G.: Biochemie der Haut, Jena, G. Fischer, 1913.

14. Unna, P. G.: Lebensvorgänge in der Haut der Menschen und der Tiere, Leipzig, F. Deuticke, 1925.

15. Unna, P. G.: Histochemie der Haut, Leipzig, F. Deuticke, 1928.

studied by others and is, therefore, hardly known. Investigators interested in the histochemistry of the skin will find valuable material for their own work in these histochemical writings.

Unna, determined with his reagent Rongalitweiss® (a solution of the leuco base of methylene blue kept in a state of reduction by an excess of sodium formaldehyde sulfoxylate) the presence of areas with excess of oxygen (*"Sauerstofforte"*). He distinguished primary oxygen areas, containing oxygen and peroxidase, and secondary oxygen areas, containing oxygen only. Primary oxygen areas are the nuclei and the mast cells. Secondary oxygen areas are the granoplasm of the protoplasm, the globulin of the nucleolus, the basic substance of the cartilage, the Nissl bodies of the ganglion cells and the plasma cells. Oxygen from the primary oxygen areas, the sources of oxygen, goes to the secondary oxygen areas, where it is stored. The undisturbed storage of oxygen within the secondary oxygen areas is an essential characteristic of the oxygen metabolism of the skin tissue. Collagen and the subcutaneous fat layer are saturated with oxygen without possessing an excess of it. All other elements of the skin, such as the spongioplasm of the protoplasm, elastin, muscles, nerves, stratum corneum, hair and nails, compose the areas which consume oxygen (*"Reduktionsorte"*). They can be demonstrated by three staining methods (with potassium permanganate, with ferric chloride and potassium ferricyanide and with tetranitrochrysophanic acid). The skin as a whole constitutes a large oxygen-consuming area.

In 1913, Unna described his chromolytic method,*"Chromolyse,"* with which he tried to build a bridge between histology and tissue chemistry. His chromolysis consists of a systematic series of alternate tests with chemical solvents and stains on frozen tissue sections. After each protein-dissolving agent chosen for the experiment in question is used, the tissue is stained in order for it to be determined whether or not the tissue element to be examined is dissolved. The demonstration of a certain protein is the result of the sequence of tests with solvents and stains.

In his last work, "Histochemie der Haut," [15] Unna gave a summary of his studies on the chemistry of the various tissue elements. With the help of his chromolytic experiments he demonstrated both proteins of the nucleus, plastin and mesoplastin, and the four different proteins of the nucleolus, plastin, mesoplastin, acid globulin and nucleoprotein. He also found that the interepithelial fibrils could be separated into a basic bottom layer and an acid top layer. He explained his *"Stockwerktheorie"* of the cell as follows: Every part of a cell should be considered a small building in which at least three floors exist for

the storage of the different protein groups. The top floor stores the acid proteins cytose, globulin and nucleoprotein; the middle floor stores the basic protein mesoplastin, and the lower floor stores the basic protein plastin. The *"Histochemie"* fully illustrates all his observations.

Unna was the master of an indefatigable dermatologic propaganda. His aims were not only to foster and spread dermatologic knowledge among the small circle of specialists of his time but also to enable all physicians to become acquainted and familiar with it. Unna was already outstanding at an early time of his career for having established friendships with foreign dermatologists (in the United States with Duhring), which became the stimulus for a mutual exchange of valuable ideas. The "International Atlas of Rare Skin Diseases"[16] was the product of successful collaboration by Malcolm Morris of London, Leloir of Lille, Duhring of Philadelphia and Unna. The use of three languages in this atlas made it possible for all specialists of the world to become acquainted with new observations in clinical dermatology.

The *Monatshefte für Praktische Dermatologie,* founded in 1882 with Hans von Hebra and Oscar Lassar and known since 1912 as *Dermatologische Wochenschrift,* was the first dermatologic periodical which not only engaged the attention of larger medical circles in dermatology in Germany but also had from the start an outspoken international character through numerous contributions of American, English, French, Italian, Russian and Scandinavian authors and was thus instrumental in establishing the most valuable international collaboration in dermatology.

Unna was among the first dermatologists in Europe who recognized the tremendous importance of postgraduate courses in dermatology. He first gave such courses in 1886, and for many years thereafter numerous physicians from Germany and many other countries came to Hamburg to benefit from his teaching. These courses covered clinical features, anatomy, histopathology, bacteriology, mycology, pharmacology, chemistry, photography and histologic technic with reference to skin diseases.

Unna, the dermatologic genius, is dead, but his work lives and constitutes a perpetual stimulus for new scientific accomplishments in dermatology.

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16. Unna, P. G.; Morris, M.; Duhring; L. A., and Leloir, H.: Internationaler Atlas von seltenen Hautkrankheiten, Hamburg, L. Voss, 1891-1899.

TREATMENT OF SENILE KERATOSES WITH PODOPHYLLIN

A. FLETCHER HALL, M.D.
SANTA MONICA, CALIF.

SENILE keratoses are probably the most commonly recognized forerunners of cutaneous cancer. I refer to the hyperkeratotic plaques which are typically barely elevated, gray-tan or pink, sandpaper-like to the touch, sometimes but not always covered by a firmly adherent scale and found almost exclusively on the sun-exposed skin surfaces of persons who are usually middle aged or older and frequently blue eyed or gray haired and of English, Irish or Scottish extraction. Series of cases have been reported in which as many as 25 per cent of such lesions have become carcinomas, usually of the squamous cell type.

This presentation, however, is not concerned with the diagnosis or prognosis of senile keratoses but with a method of treatment which has proved to be eminently satisfactory during the past three years and which can be recommended for its convenience and amazingly good cosmetic results. It is, of course, entirely too early to judge the permanence of the results, but it can be stated that a few minor recurrences have been noted to date, all of which responded completely to repetition of the treatment.

Podophyllin is prepared from the dried rhizomes and roots of Podophyllum peltatum, the "may apple." Its principal active constituents are a resin and a crystalline substance, podophyllotoxin; Maurice Sullivan[1] at Johns Hopkins showed that it is the latter substance which produces the severe cytotoxic effects and interference with mitosis, on which depend the well known effect of podophyllin on condylomata acuminata. Culp and Kaplan[2] reported on the successful treatment of 200 cases of condylomata acuminata by the application of a 25 per cent suspension of podophyllin in mineral oil, in 1944; they reported no success in the treatment of common warts, flat warts or plantar warts but stated that in 2 treatment-resistant cases granuloma

1. Sullivan, M.: Podophyllotoxin, Arch. Dermat. & Syph. **60**:1-13 (July) 1949.

2. Culp, O. S., and Kaplan, I. W.: Condylomata Acuminata: 200 Cases Treated with Podophyllin, Ann. Surg. **120**:251-256 (Aug.) 1944.

inguinale was cured promptly by local treatment with the podophyllin suspension and that the preparation was used with dramatic success to remove excessive granulation tissue from surgical wounds.

In 1948 Wyss-Chodat [3] reported in *Dermatologica* that a squamous cell carcinoma arising in an old area of lupus vulgaris seemed to be specifically influenced, though not completely cured, by treatment with a 25 per cent podophyllin suspension "in a fatty vehicle." In February 1949 George Andrews [4] reported the disappearance of precancerous lesions and small epitheliomas in an area of roentgen ray dermatitis, after they had been painted with 25 per cent podophyllin in castor oil.

In May 1949 Leslie Smith,[5] of El Paso, Texas, reported before the American Dermatological Association on the treatment of basal cell epitheliomas and preepitheliomatous lesions by repeated exposures of these lesions to podophyllin; his results were cosmetically excellent. In the September 1949 *Bulletin of the Johns Hopkins Hospital* Maurice Sullivan [6] reported the healing of nineteen of twenty carcinomas (twelve basal cell carcinomas up to 2.5 by 3 cm., seven intraepidermal carcinomas up to 8 by 14 cm. and one prickle cell carcinoma 4 by 6 cm.) following repeated applications of a 20 per cent solution of podophyllin in 95 per cent alcohol. In an author's note submitted five months after the report cited, Sullivan reported recurrences in four of the nineteen healed lesions, apparently none, however, occurring among the seven intraepidermal carcinomas. In a discussion at the American Academy of Dermatology and Syphilology in December 1949, Sullivan stated that he feared that the relapse rate was too high to justify the treatment of well developed skin carcinoma by podophyllin alone but posed the question of whether podophyllin, which seems to "freeze" mitosis in the prometaphase, might be used as a sensitizer of malignant tissue to roentgen rays.

I first undertook the treatment of my own senile keratoses with 25 per cent podophyllin solution in equal parts of 95 per cent alcohol

3. Wyss-Chodat, F.: A propos de Podophylline, Dermatologica **97**:1-9, 1948, abstracted in Sulzberger, M. B., and Baer, R.: 1949 Year Book of Dermatology and Syphilology, Chicago, Year Book Publishers, 1950, p. 52.

4. Andrews, G. C.: Possible Prevention of Cancer in Chronic Radiodermatitis by Medical Means, Connecticut M. J.: **13**:105-108 (Feb.) 1949, abstracted in Sulzberger, M. B., and Baer, R.: 1949 Year Book of Dermatology and Syphilology, Chicago, The Year Book Publishers, Inc., 1950, p. 93.

5. Smith, L. M., and Garrett, H. D.: Resin of Podophyllum in Treatment of Cancerous and Precancerous Conditions of Skin: Effect on Basal Cell Epithelioma and Seborrheic, Senile and Radiation Keratoses Arch. Dermat. & Syph. **61**:946-956 (June) 1950.

6. Sullivan, M.: Treatment of Cutaneous Cancer with Podophyllin, Bull. Johns Hopkins Hosp. **85**:200-203 (Sept.) 1949.

and acetone early in 1947. It soon became evident that if the treatment was to be successful it had to be preceded by careful removal of all the keratotic scales, as the solution does not seem to penetrate the stratum corneum (and possibly the stratum lucidum). When curettage is carried out sufficiently to remove these, bleeding points are often exposed; when it was found that the podophyllin solution tended to prolong this bleeding, 20 per cent salicylic acid was added to the mixture. Surprisingly enough, it was found that the inflammatory reaction following application of the mixture containing salicylic acid and podophyllin was less severe and less long lasting than that following

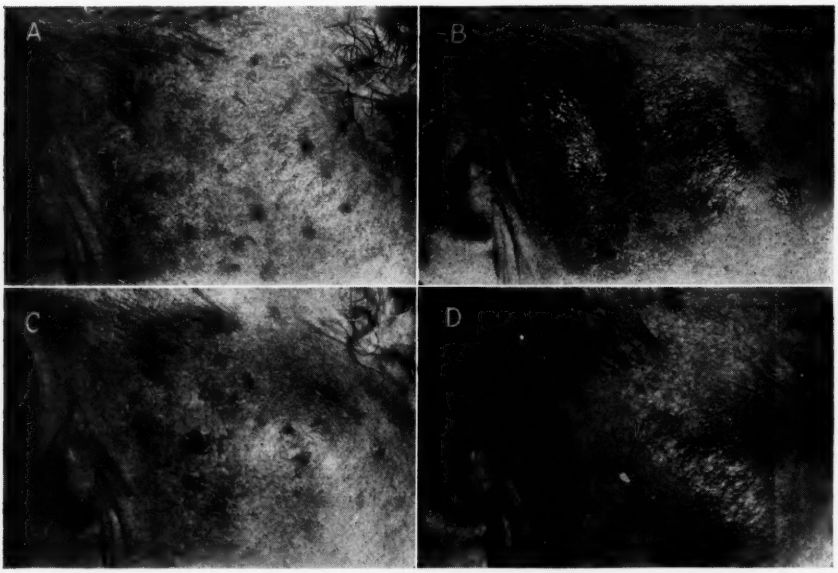

Fig. 1 (case 1).—*A*, precancerous type keratoses of the right zygomatic area before treatment with podophyllin. *B*, lesions immediately after removal of all keratotic scales (to papillary bleeding at two points) and application of 25 per cent podophyllin in acetone and alcohol. *C*, lesions five days after podophyllin therapy. Note the adherence of the resinous crust to formerly keratotic areas with loss of podophyllin solution from intervening normal areas. *D*, area seen three weeks after treatment.

application of the solution of podophyllin alone; yet the ultimate result appears to be the same whichever solution is used.

METHOD OF TREATMENT

The technic used at the time of writing was the following:

Without anesthetic, relatively light curettage of the surface of the keratosis is carried out; the thickened stratum corneum either peels off or comes off in scales except in the "pink sandpaper" type of keratosis on the florid face, where there is

practically no intact stratum corneum present. Some pain is experienced by the patient, particularly if he has the florid type of skin, but not nearly as much as is occasioned by the application of solid carbon dioxide. If there is much bleeding it is controlled by a few minutes' pressure with a gauze square.

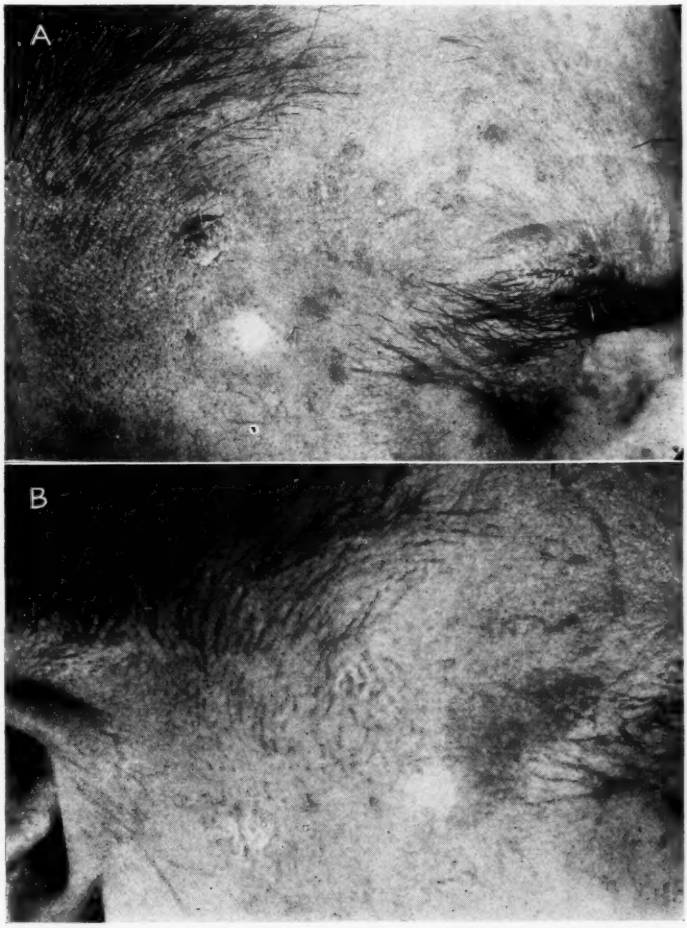

Fig. 2 (case 2).—*A*, precancerous type keratoses of the right temple before treatment with podophyllin and old white scar following electrocoagulation and curettage of similar lesion several years previously. *B*, the area three weeks after treatment such as described under fig. 1 *B*.

When the bleeding, if any, is almost completely controlled, the podophyllin solution is pressed on by means of a saturated cotton-tipped applicator; this is held in place for 15 to 30 seconds and results in the degree of stinging sensation to be

Fig. 3 (case 3).—*A*, precancerous type keratoses on the left side of the bridge of the nose and on the left side of the skin of upper lip before treatment with podophyllin. (The large carcinoma above the outer canthus was not treated with podophyllin.) *B*, the same area, three months after a single treatment consisting in removal of all keratotic scales and application of 25 per cent podophyllin and 20 per cent salicylic acid in acetone and alcohol.

Fig. 4 (case 3).—*A*, precancerous type keratoses on the right cheek before treatment with podophyllin. *B*, the same area, one month after a single treatment with podophyllin and salicylic acid as was applied to the left side of the face.

expected from the application of alcohol. The solution consists of 25 per cent podophyllin and 20 per cent salicylic acid in equal parts of acetone and 95 per cent alcohol.

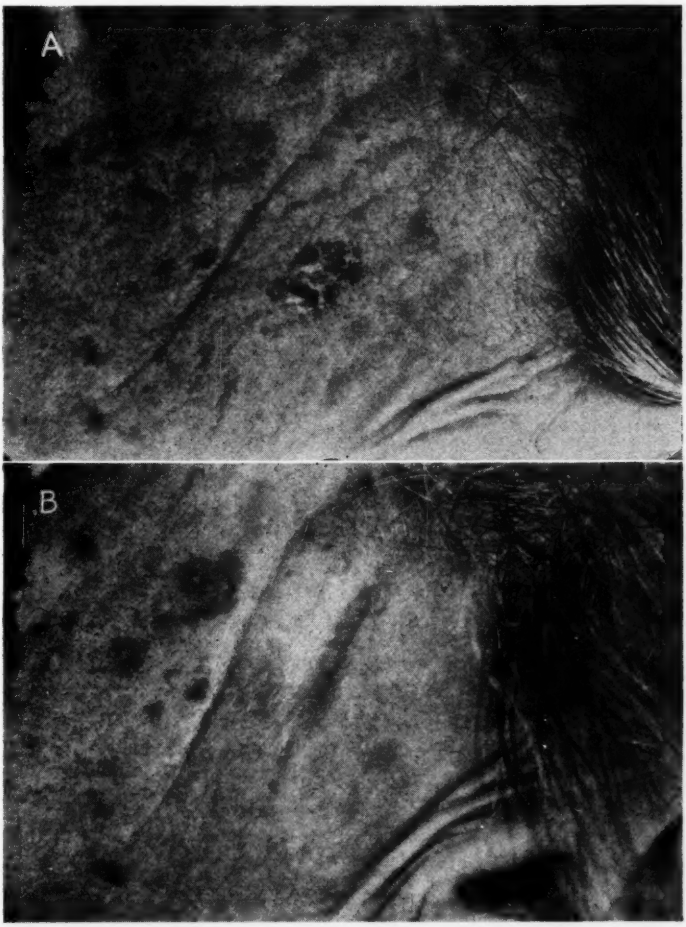

Fig. 5 (case 4).—*A*, precancerous type keratosis (possibly early carcinoma) anterior to left ear; also old white scar following electrocoagulation of similar lesion several years previously. *B*, same, three weeks after a single treatment consisting of curettage and application of podophyllin and salicylic acid solution as in case 3.

The treated lesion is allowed to dry; if a bleeding point or so breaks through further pressure and retouching with the solution are carried out.

The patient is instructed not to wash over the treated area for twelve hours, but after that he may wash or shave as desired, though shaving should not be close. The patient is warned that the treated area will become slightly red and tender, particularly if an extensive area has been treated. He is told that the tenderness

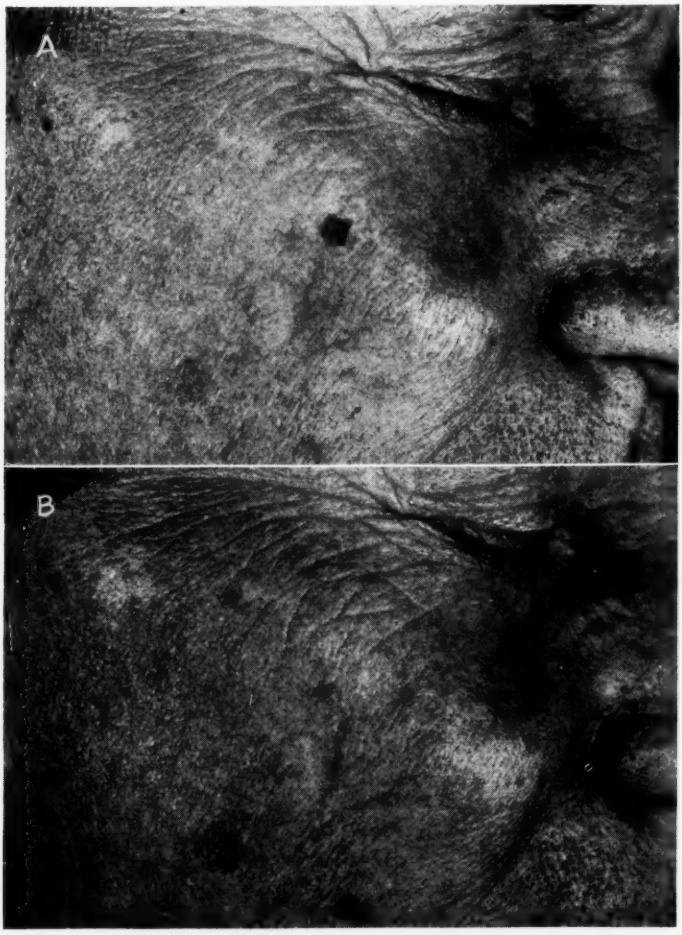

Fig. 6 (case 5).—*A*, probable early carcinoma of the right malar eminence, also two nearby scars which followed electrocoagulation of similar lesions several years previously. *B*, same, two weeks after a single treatment consisting in curettage and application of 25 per cent podophyllin as in case 1.

may last for a week or so, at the end of which time the edges of the resinous crust will begin to loosen and start to peel; he should not peel the crusts off prematurely.

The patient should be observed two weeks after the treatment, at which time the remaining crusts (often detached but held on by hairs, for example) may be

peeled off. A pink smooth surface is exposed which after about two more weeks regains its normal color and shows no evidence of scarring.

Occasionally, on curettage of what originally appeared to be a simple keratosis, one or more cuplike pockets are exposed, making it apparent that early carcinoma has supervened; in such cases it has proved sufficient to curet these points a little more thoroughly, stop the bleeding with pressure and apply the podophyllin solution as usual. A slight scar results.

Podophyllin treatment of keratoses close to the canthi of the eyes is sometimes followed in twenty-four to forty-eight hours by an intense conjunctivitis and keratitis; it is not clear how the irritant gets into the eye, as it occasionally does after great care has been taken to avoid such a happening.

In areas of diffuse keratosis, such as the forehead and temples or the top of a bald head in particularly sun-sensitive persons, the whole area may be painted with the podophyllin solution after curettage of the more keratotic lesions.

Seborrheic keratoses or senile warts may be successfully treated by curettage and application of podophyllin solution.

Multiple lesions of molluscum contagiosum clear up satisfactorily after three to six weekly paintings with podophyllin solution, without preparatory incision or curettage; the treatment is painless, the solution presumably penetrating the lesion through the umbilicated apical opening.

The lesions of multiple superficial epitheliomatosis respond well to curettage and treatment with the podophyllin solution.

Keratoses of the hands and fingers do not respond satisfactorily to this treatment unless they are unusually superficial.

CONCLUSIONS

Senile keratoses are important as precancerous lesions of the skin and should be treated.

The destructive treatment methods generally recommended in the past, such as electrocoagulation with or without curettage, the application of acids or solid carbon dioxide and radiation therapy are all followed by various degrees of scarring or other sequelae.

A method of treatment is presented which is simple in operation and which is not followed by visible scarring.

Podophyllin reaching the conjunctival sac either at the time of treatment or later (presumably via sweat) gives rise to an intense conjunctivitis and keratitis, and this occurrence must be carefully avoided.

In view of the fact that others have found this method adequate in the treatment of skin cancer, it is felt that it may be considered safe in the treatment of precancerous lesions.

The incidence of late recurrences or sequelae (possibly similar to roentgen ray sequelae?) had not yet been determined at the time of writing.

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DECADENT DESCRIPTIONS IN DERMATOLOGY

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FOR A LONG time it has been evident that certain descriptive designations of clinical dermatology lacked scientific specificity. To those who write case reports and who demonstrate patients, the difficulty of painting a picture with words is only too painfully familiar. The deficiencies of the everyday vocabulary in this respect are present to a most glaring degree in attempts to describe color. The color of normal skin may not present too great a difficulty (fig. 1). The description of skin lesions, however, causes the greatest difficulty. In demonstrating this phase of morphologic description to students it is probably a common exercise of demonstrators to point to a lesion and ask those present to describe its color. Here is an example of the answers obtained in such an exercise with fourth year medical students: "reddish brown," "dark red," "rusty red," "red" (2), "brown," "copper" and "tomato red." Probably everyone teaching clinical dermatology has used this same method to impress on students the importance of observing and describing the exact color of skin lesions.

Texts and literature abound with attempts to convey color description which are considerably less than scientific. These descriptions are artistic and imaginative but should no longer have a place in dermatologic nomenclature (fig. 6). The expression, "this shrinking world," no less true because of its triteness, was well exemplified in Chicago in 1948 at the meeting of the American Academy of Dermatology and Syphilology, where I presented the subject of color and size designation as an exhibit. Two visitors from India were apparently favorably impressed by the message; one said that he had frequently read descriptions of lesions that were like apple jelly but that he had never seen apple jelly and so still had no picture in his mind.

H. St. H. Vertue,[1] writing from Orpington, England, also expressed his dissatisfaction with the *status quo* in this respect. He felt the necessity of describing lesions of a case of dermatitis medicamentosa in

This paper is based on an exhibit at the American Academy of Dermatology and Syphilology, Chicago, December 1948.

From the Department of Dermatology and Syphilology, Tufts College Medical School, John G. Downing, M.D., Professor.

1. Vertue, H. St. H.: Correspondence, Brit. J. Dermat. **60**:386, 1948.

"absolutely precise terms." He, therefore, used color charts issued by the Royal Horticultural Society. To show that the naming of colors without a chart "is an almost valueless procedure," he showed the color to two dermatologists, two artists, "a well-dressed woman," a typist and a distinguished physician. The answers he received varied widely. He suggested the adoption of color charts for accurate descriptions.

DESIGNATION OF SIZE

Designation of size is in an equally chaotic condition. Does every dermatologist in France know how large a quarter is? Francesco

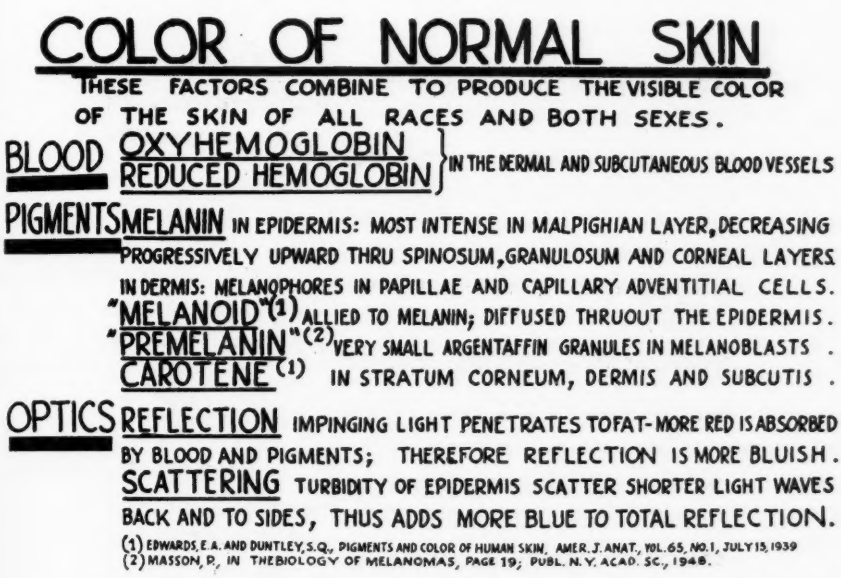

COLOR OF NORMAL SKIN
THESE FACTORS COMBINE TO PRODUCE THE VISIBLE COLOR OF THE SKIN OF ALL RACES AND BOTH SEXES.
BLOOD
OXYHEMOGLOBIN
REDUCED HEMOGLOBIN
IN THE DERMAL AND SUBCUTANEOUS BLOOD VESSELS
PIGMENTS
MELANIN IN EPIDERMIS: MOST INTENSE IN MALPIGHIAN LAYER, DECREASING PROGRESSIVELY UPWARD THRU SPINOSUM, GRANULOSUM AND CORNEAL LAYERS
IN DERMIS: MELANOPHORES IN PAPILLAE AND CAPILLARY ADVENTITIAL CELLS.
"MELANOID" (1) ALLIED TO MELANIN; DIFFUSED THRUOUT THE EPIDERMIS.
"PREMELANIN" (2) VERY SMALL ARGENTAFFIN GRANULES IN MELANOBLASTS.
CAROTENE (1) IN STRATUM CORNEUM, DERMIS AND SUBCUTIS.
OPTICS
REFLECTION IMPINGING LIGHT PENETRATES TO FAT-MORE RED IS ABSORBED BY BLOOD AND PIGMENTS; THEREFORE REFLECTION IS MORE BLUISH.
SCATTERING TURBIDITY OF EPIDERMIS SCATTER SHORTER LIGHT WAVES BACK AND TO SIDES, THUS ADDS MORE BLUE TO TOTAL REFLECTION.
(1) EDWARDS, E. A. AND DUNTLEY, S. Q., PIGMENTS AND COLOR OF HUMAN SKIN, AMER. J. ANAT., VOL. 65, NO. 1, JULY 15, 1939
(2) MASSON, P., IN THE BIOLOGY OF MELANOMAS, PAGE 19; PUBL. N. Y. ACAD. SC., 1948.

Fig. 1.—Color of normal skin.

Ronchese, in a personal communication apropos this subject, called my attention to the following:

> "cette tumeur, de la taille d'une pièce de deux francs" (*Bull. Soc. franç. de dermat. et syph.*, May-June 1948, no. 3, p. 181)
>
> "formazione squamosa della grandezza di uno scudo" (*Gior. ital. dermat. e sif.* **89**:391 [July-Aug.] 1948)

Do all dermatologists in the United States know how large a 2 franc piece or a scudo is?

Description of a lesion as "the size of a nut" is so obviously vague that it should be enough merely to call attention to its presence in con-

temporary literature for writers to cease its use. To say "as big as a hazelnut" may be equally futile if the reader has never seen a hazelnut! The use of such terms as the following to designate size may be dramatic

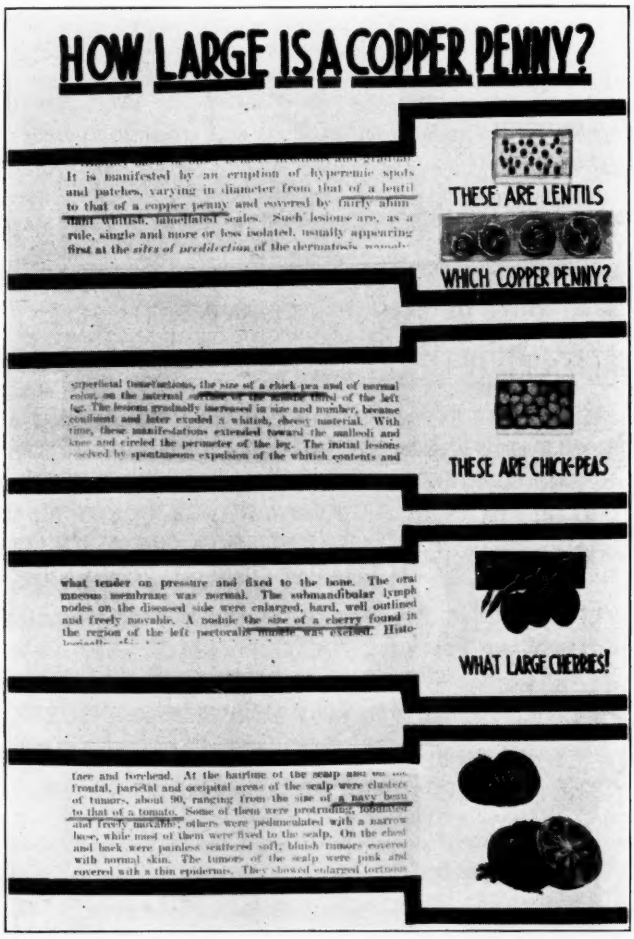

HOW LARGE IS A COPPER PENNY?
It is manifested by an eruption of hyperemic spots and patches, varying in diameter from that of a lentil to that of a copper penny and covered by fairly abundant whitish, lamellated scales. Such lesions are, as a rule, single and more or less isolated, usually appearing first at the sites of predilection of the dermatosis
THESE ARE LENTILS
WHICH COPPER PENNY?
superficial ulcerations, the size of a chick pea and of normal color, on the internal surface of the middle third of the left leg. The lesions gradually increased in size and number, became confluent and later exuded a whitish, cheesy material. With time, these manifestations extended toward the midleg and knee and circled the perimeter of the leg. The initial lesions healed by spontaneous expulsion of the whitish contents and
THESE ARE CHICK-PEAS
what tender on pressure and fixed to the bone. The oral mucous membrane was normal. The submandibular lymph nodes on the diseased side were enlarged, hard, well outlined and freely movable. A nodule the size of a cherry found in the region of the left pectoralis muscle was excised.
WHAT LARGE CHERRIES!
face and forehead. At the hairline of the scalp and on the frontal, parietal and occipital areas of the scalp were clusters of tumors, about 90, ranging from the size of a navy bean to that of a tomato. Some of them were protruding, pedunculated and freely movable; others were pedunculated with a narrow base, while most of them were fixed to the scalp. On the chest and back were painless scattered soft, bluish tumors covered with normal skin. The tumors of the scalp were pink and covered with a thin epidermis. They showed enlarged tortuous

Fig. 2.—Examples of decadent descriptive terms for size. The illustrative material is taken from the following sources: paragraph 1, from Wise, F., and Sulzberger, M. B.: Psoriasis and Its Treatment, in Wise, F., and Sulzberger, M. B.: The 1940 Year Book of Dermatology and Syphilology, Chicago, The Year Book Publishers, Inc., 1941; paragraph 2, from a published abstract of Ronchese, F.: Metastases of the Scalp Simulating Turban Tumors, ARCH. DERMAT. & SYPH. **41**:639-648 (April) 1940; paragraph 3, from a published abstract of Bordonaro, F.: Anatomicopathologic Study of a Rare Picture of Cutaneous Epithelial Tumor, *Gior. ital. dermat. e sif.* **80**:891-910 (Oct.) 1939, and paragraph 4, from a published abstract of Zakon, S. J.: Naevo-Epithelioma Adenoides (Cylindroma) of Scalp, ARCH. DERMAT. & SYPH. **40**:945-949 (Dec.) 1940.

or poetic or attractive but cannot by any stretch of the imagination be consonant with accurate scientific nomenclature: saucer, tomato, small bird's egg, fist or copper penny (fig. 2).

A number of seeds commonly used as descriptive units of size were measured and found to vary as follows: millet (proso, broom corn), from 1.25 to 4.0 mm. long; lentil (lentillalens), from 2.5 to 6.0 mm., widest diameter, and grape ("Concord" and "California white"), from 3.0 to 6.5 mm. long.

It was not possible to obtain hemp seed because it is from a narcotic plant (cannabis, marijuana) and cannot be legally possessed without a special federal license. A lesion described to be the size of a hemp seed must therefore remain somewhat of a mystery unless recourse is had to an encyclopedia.

This discussion regarding size need be pursued no further to reach a conclusion: Size should be designated by units of measure, i. e., millimeters or centimeters (or inches).

DESIGNATION OF COLOR

The designation of color is a difficult problem. We can at once disregard, for our purpose, those designations which use wavelength measurements. As long ago as 1931 the necessity for word description of the color of drugs and chemicals was recognized by the Committee for Revision of the United States Pharmacopoeia.[2]

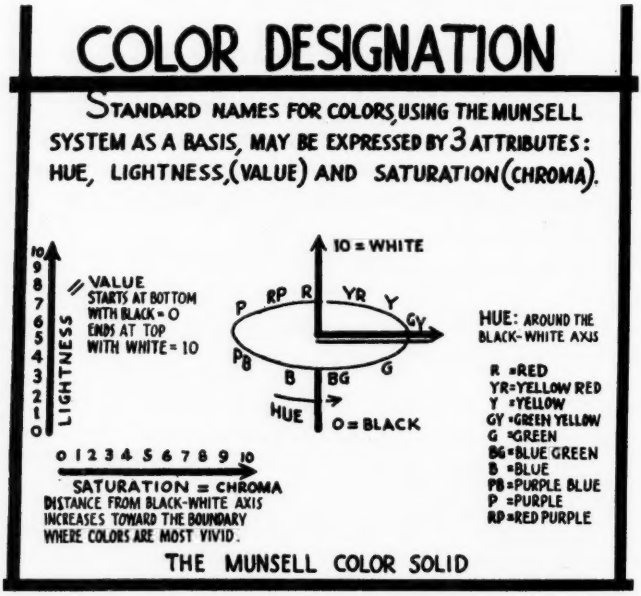
The first chairman of the Inter-Society Color Council, E. N. Gathercoal, stated the problem to be as follows:

"A means of designating colors. . . . is desired; such designation to be sufficiently standardized as to be acceptable and usable by science, sufficiently broad to be appreciated and used by science, art, and industry and sufficiently commonplace to be understood, at least in a general way, by the whole public."

This problem was considered by the Inter-Society Color Council, of which the United States Pharmacopoeial Convention is a member along with the Committee on National Formulary of the American Pharmaceutical Association, the American Psychological Association, the Illuminating Engineering Society, the Optical Society of America and the American Association of Textile Chemists and Colorists, among others. The Committee on Measurement and Specification of the Inter-Society Color Council worked out various plans. Finally, in 1939, the Council formally approved a method of color designation for the description of drugs and chemicals and recommended it for use for the "United States Pharmacopoeia" and "National Formulary."

2. Judd, D. B., and Kelly, K. L.: Method of Designating Colors, Bureau of Standards J. Research **23**:355 (Sept.) 1939.

A discussion of this subject appeared in the "National Formulary." [3] A method for naming colors which employs simple English words but is based on a sound scientific foundation was described. The ISCC-NBS System of Color Naming, by which name the method is known, has


COLOR DESIGNATION
STANDARD NAMES FOR COLORS, USING THE MUNSELL SYSTEM AS A BASIS, MAY BE EXPRESSED BY 3 ATTRIBUTES: HUE, LIGHTNESS (VALUE) AND SATURATION (CHROMA).
10 9 8 7 6 5 4 3 2 1 0
LIGHTNESS
VALUE
STARTS AT BOTTOM WITH BLACK = 0
ENDS AT TOP WITH WHITE = 10
10 = WHITE
P RP R YR Y GY G BG B PB
HUE
0 = BLACK
HUE: AROUND THE BLACK-WHITE AXIS
R = RED
YR = YELLOW RED
Y = YELLOW
GY = GREEN YELLOW
G = GREEN
BG = BLUE GREEN
B = BLUE
PB = PURPLE BLUE
P = PURPLE
RP = RED PURPLE
0 1 2 3 4 5 6 7 8 9 10
SATURATION = CHROMA
DISTANCE FROM BLACK-WHITE AXIS INCREASES TOWARD THE BOUNDARY WHERE COLORS ARE MOST VIVID.
THE MUNSELL COLOR SOLID

VERY PALE (VERY LIGHT, WEAK)	VERY LIGHT	VERY BRILLIANT (VERY LIGHT, STRONG)	
PALE (LIGHT, WEAK)	LIGHT	BRILLIANT (LIGHT, STRONG)	
WEAK	MODERATE (MEDIUM LIGHTNESS) (MEDIUM SATURATION)	STRONG	VIVID
DUSKY (DARK, WEAK)	DARK	DEEP (DARK, STRONG)	
VERY DUSKY (VERY DARK, WEAK)	VERY DARK	VERY DEEP (VERY DARK, STRONG)	

LIGHTNESS

SATURATION

REFERENCE: METHOD OF DESIGNATING COLORS, JUDD AND KELLY, RES'CH PAPER 1239, N.B.S.

Fig. 3.—Above, schematic outline of Munsell Color Solid; below, modifying adjectives for color names.

as a basis the "Munsell Book of Color," a tridimensional color designation system.

3. The National Formulary, ed. 8, Washington, D. C., American Pharmaceutical Association, 1946, p. 1.

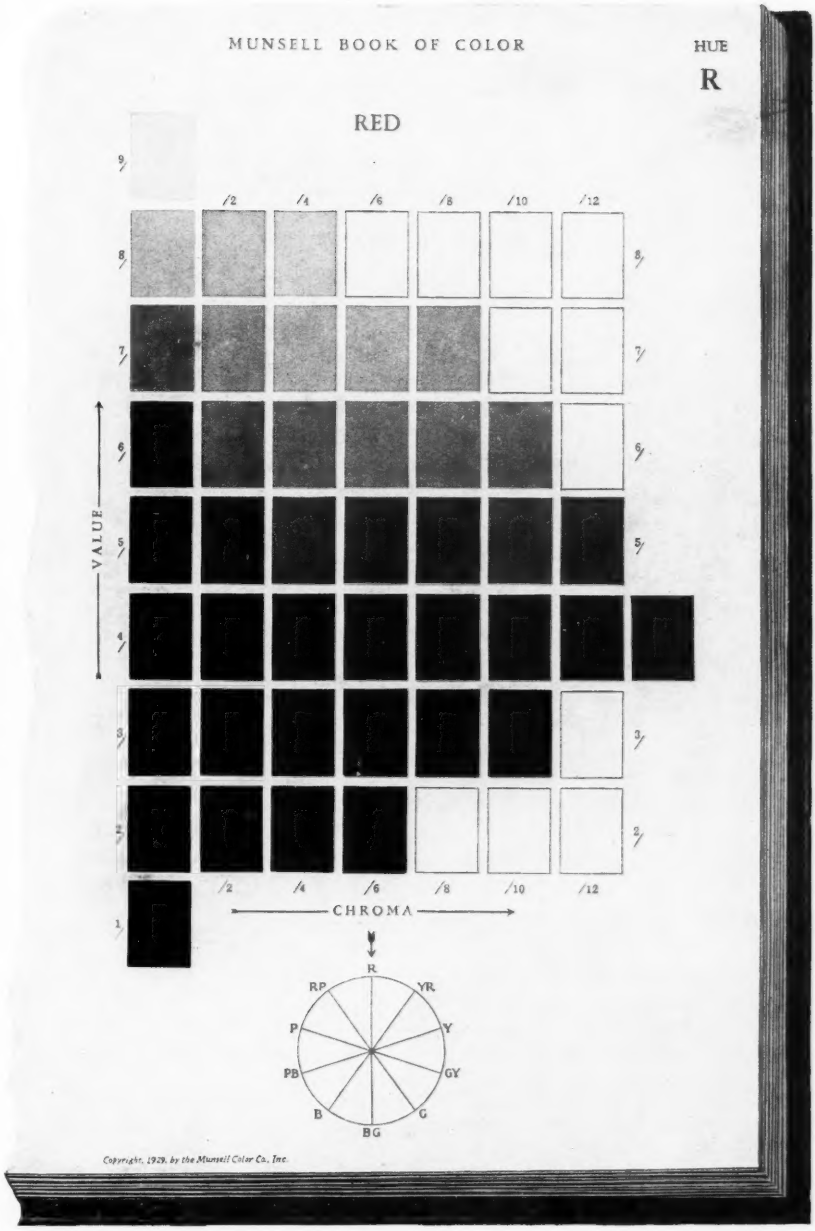


Fig. 4.—To find color names, refer to figure 5. This is a printed approximation of the colors appearing on the 5R chart from the "Munsell Book of Color." The colors are not to be considered Munsell reference standards but merely an illustration of the system.

The Munsell system uses an irregular cylinder (fig. 3), called the "psychological color solid." The core of this cylinder is black on the bottom and gradually lightens as it becomes dark gray, medium gray, light gray and then white at the top. This range goes from the designation of 0 for black up to 10 for white and is called "value" in the Munsell system. Around this axis of black to white are the hues red, yellow, green, blue and purple and the intermediate hues orange, yellow-green, blue-green and several others. If this cylinder were split at some point —say the middle of the red area—and opened like a book, at the bottom the colors would be darkest, and at the top, lightest. From the central axis out toward the edge, the colors increase in saturation. In the Munsell system this increase in saturation is called "chroma" and is given numerical values from 0 at the axis to 12 or 14 or 16 at the edge, depending on the hue. Each hue is given a number around the 100 point circle of the circumference of the color solid. The particular plane at which we happened to examine this solid at random is designated as 5R (fig. 4). If we select the approximate center of this plane (or page), it would be designated as having a value of 5/ (medium in the degree of lightness) and a chroma of /8 (medium in the degree of saturation), and the color would be desginated as 5R, 5/8.

Obviously a color designation of 5R, 5/8 is not by the use of "simple English words"! This particular exact color, however, is surrounded by several others which are so nearly, although not quite exactly, like it that they may be considered together as one color for practical purposes which do not require extreme degrees of exactitude. Working along this plan of converting the special numerical designations of the Munsell system into equivalent names, Miss Dorothy Nickerson, color technologist, devised a set of "name charts."[4]

> "These names have enjoyed a considerable . . . use, and they were recommended in the American War Standard Z44-1942 for Specification and Description of Color. . . . In 1947 . . . the present subcommittee . . . agreed on revised definitions in terms of Munsell renotations [and] . . . the present definitions accord well with common usage of color names." [5]

By use of chart 2 (fig. 5) of this revised group of name charts, we now locate our theoretic red color 5R, 5/8 by looking on the vertical scale of Munsell "value" (lightness) to 5/ and across the horizontal scale and Testing Division, United States Department of Agriculture).
of Munsell "chroma" (saturation) to /8 and we find a large square called moderate red. That is the name of our color.

4. Judd and Kelly,[2] p. 367. Nickerson, D.: Color Measurement, Handbook Method of Disk Colorimetry, Miscellaneous Publication 580, United States Department of Agriculture, March 1946, p. 48.

5. Quoted from "Report of Subcommittee on Problem 2, Color Names," Deane B. Judd, chairman; a printed report is now in preparation; it will include copies of the revised charts plus several appendixes of equivalent ISCC-NBS Color Names (personal communication from Dorothy Nickerson. color technologist, Research

The simplification of this method is as follows: 1. The hue is named; the chief series of hue names includes red, reddish orange, orange, yellowish orange, yellow, greenish yellow, yellow-green, yellow-

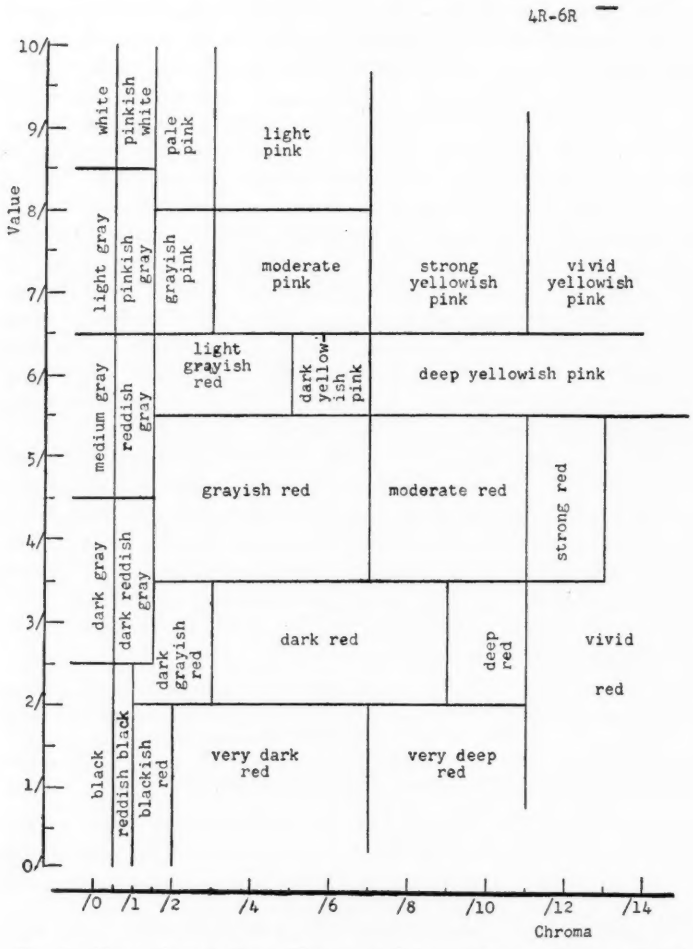


Fig. 5.—Name chart 2 (from "Report of Subcommittee on Problem 2, Color Names" [5]). Use colors from figure 4; transpose value and chroma to find color name.

ish green, green, bluish green, blue-green, greenish blue, blue, purplish blue, bluish purple, purple, reddish purple, red-purple and purplish red. There are several other hue names.

2. The modifier is an adjective that designates both lightness (Munsell "value") and saturation (Munsell "chroma"). Lightness (going from the bottom toward the top) is designated as very dark, dark, moderate (medium), light or very light. Saturation (going from the axis to the edge, left to right) is designated as weak, moderate (medium), strong, very strong or vivid.

The weak colors, as they diminish in value upward, are also modified, by the terms very dusky, dusky, pale and very pale. The strong colors, as they diminish in value upward, are also modified, by the terms very deep, deep, brilliant and very brilliant. Figure 3 coordinates and clarifies this adjectival system.

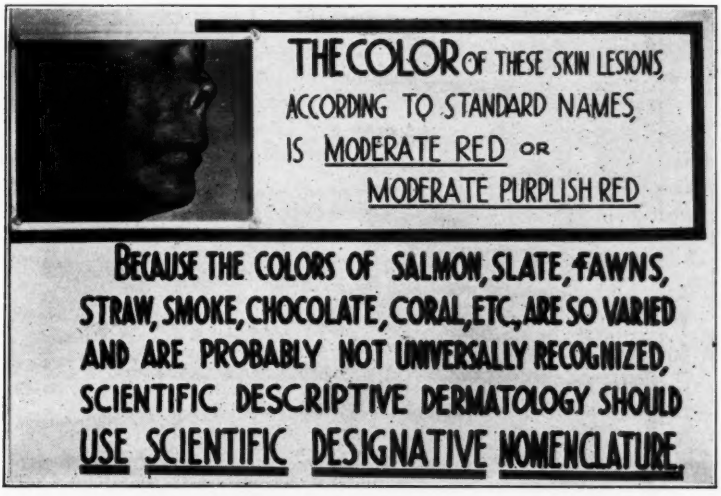

THE COLOR OF THESE SKIN LESIONS, ACCORDING TO STANDARD NAMES, IS MODERATE RED OR MODERATE PURPLISH RED
BECAUSE THE COLORS OF SALMON, SLATE, FAWNS, STRAW, SMOKE, CHOCOLATE, CORAL, ETC., ARE SO VARIED AND ARE PROBABLY NOT UNIVERSALLY RECOGNIZED, SCIENTIFIC DESCRIPTIVE DERMATOLOGY SHOULD USE SCIENTIFIC DESIGNATIVE NOMENCLATURE

Fig. 6.—Color names in dermatology should have a scientific basis.

Thus one can place in the mind's eye the approximate location of a properly named color on a page of this book of color. Moderate red would be approximately in the middle of the page; very brilliant reddish orange would be in the upper right corner, and very dusky purplish red would be in the lower left corner, for example. Again, keeping in mind that lightness ascends upward from black to white at the left edge of the page and that saturation increases from left to right along this page, one should easily be able, with brief practice, to make this system of nomenclature conjure up a reasonable approximation of the color so described by words. If it should become necessary to be reasonably accurate, color names could be matched with the "Munsell Book of Color" and so more definitely demarcated. That the Munsell color notation is already well standardized in scientific circles is well attested by numerous reports and society publications; for example, a Committee

of the Optical Society of America showed how to convert spectrophotometric measurements into the Munsell notation.[6]

Fig. 7.—Examples of decadent color descriptions in dermatology. The illustrative material is taken from the following sources: paragraph 1, from Urbach, E., and LeWinn, E. B.: Skin Diseases, Nutrition and Metabolism, New York, Grune & Stratton, Inc., 1946, p. 158; paragraph 2, from a published abstract of Sulzberger, M. B., and Baer, R. L.: Embolia Cutis Medicamentosa, Am. J. Syph., Gonor. & Ven. Dis. **24**:50-58 (Jan.) 1940, and paragraph 3, from a published abstract of Grinnan, R. B., and Martin, W. B.: Erysipeloid: Report of a Case, Arch. Dermat. & Syph. **41**:1037-1043 (June) 1940.

6. J. Optic. Soc. America, July 1943, vol. 33. The entire issue covers various interrelations of the Munsell System.

Because the various red hues are those most frequently used in descriptions of colors of skin lesions, a color chart of red from the "Munsell Book of Color" is shown here (fig. 4) and the color name chart by means of which the colors can be translated into official color names (U. S. P. and N. F.) is also shown (fig. 5). These are only small samples and are presented so as to explain the system.

If a dermatologist does not have the "Munsell Book of Color" available, he can at least use these color names, and his imagination should supply him with a more accurate approximation of the color he wishes to convey than the unorganized, helter-skelter nomenclature of today provides. It should not be an insurmountable handicap to remember to describe a color by a term which includes the name of the hue and adjectives to indicate its modifications in lightness and strength (saturation). Instead of saying salmon colored (using the name of a fish) one should say weak reddish orange or moderate orange-pink; instead of saying smoke colored (smoke being a variable product of combustion) one should say brownish black or blackish red; instead of saying coral colored (using the name of the calcareous deposit of marine animals) one should say pinkish white or light red or vivid red; instead of saying fawn colored (using the name of an animal) one should say very pale brown or light yellowish brown. Only thus can scientific accuracy be encouraged in dermatologic description (figs. 6 and 7).

SUMMARY

Dermatology still contains much decadent descriptive nomenclature of size and color.

Designation of size in dermatologic description should be in terms of measurement, i. e., millimeters or centimeters (or inches).

Designation of color in dermatologic description can be adequately accomplished by use of the already established system of color naming official in the "United States Pharmacopoeia" and the "National Formulary" known as the ISCC-NBS System of Color Naming based on the "Munsell Book of Color."[7] Even without exact reference to this system, colors should be designated by a combination of words which contains the name of the hue and modifying adjectives which indicate lightness and strength: for example, pale reddish orange or light yellowish brown or medium red.

281 Ocean Street.

Mrs. Blanche R. Bellamy, manager of the Munsell Color Foundation, Inc., supplied the color plates for the reproduction of figure 4, and Miss Dorothy Nickerson, color technologist, United States Department of Agriculture, gave technical assistance in explanation of the means of converting the Munsell numerical designations into equivalent names.

7. The National Formulary.[3] Munsell Book of Color, Baltimore, Munsell Color Company, Inc., 1946.

SPONGE BIOPSY IN THE DIAGNOSIS OF CANCER OF THE SKIN AND ORAL MUCOSA

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NEW YORK

THE DIAGNOSIS of cancer arising in the skin and accessible mucous membranes is established by the microscopic examination of tissue surgically removed from the diseased area. A surgical biopsy will afford the greatest amount of information when it includes diseased tissue, adjacent normal tissue and underlying tissue in both areas. To secure this material requires a fairly deep incision to remove a tissue block from the margin of the lesion extending into the surrounding parts. This procedure involves a minor surgical operation usually requiring local anesthesia, careful asepsis and hemostasis, repair by suture and dressings, among other things. While surgical biopsy thus performed may be necessary in certain cases to establish a diagnosis of cancer, its use in the examination of all suspected lesions is discouraged because of the technical difficulty of the procedure in the hands of practitioners of limited surgical experience, objections on the part of the patient and possibility of scars, especially about the face and neck, for example. Accordingly, any simplified method of procuring tissue for the microscopic diagnosis of cancer, overcoming the aforementioned objections, is worthy of study and evaluation. The method of sponge biopsy recently introduced has been studied in connection with the diagnosis of cancer of, for example, the cervix uteri, rectum and stomach.[1] The purpose of the present report is to describe the results of the application

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The material presented was included in a scientific exhibit at the Eighth Annual Meeting of the American Academy of Dermatology and Syphilology, in Chicago, December 1949.

1. Gladstone, S. A.: Sponge Biopsy: A New Method in the Diagnosis of Cancer, Cancer **2**:604 (July) 1949; Diagnosis of Early Carcinoma of the Cervix by Sponge Biopsy, New England J. Med. **241**:48 (July 14) 1949; Use of Sponge in Obtaining Tissue from Stomach for Biopsy, Am. J. Clin. Path. **19**:891 (Sept.) 1949; Application of Sponge Biopsy for Cancer Diagnosis in Office Practice, New York State J. Med. **49**:2687 (Nov. 15) 1949. Gladstone, S. A., and Selzer, I.: Cancer of the Cervix Diagnosed by Sponge Biopsy, Am. J. Surg., to be published.

of sponge biopsy to the examination of ulcerating lesions of the skin and oral mucosa suspected of being cancerous, with an attempt to define the sphere of usefulness of the method and to evaluate the results.

TECHNIC

The method of sponge biopsy depends on the absorption of tissue juice and tissue particles in the pores of a suitable sponge [2] firmly rubbed over the base and edges of an ulcerating lesion suspected of being cancerous. The sponge and absorbed material are promptly placed into a small bottle of 10 per cent formaldehyde solution U. S. P. for fixation. The sponge is then processed just like a tissue block, through the steps of dehydration, paraffin embedding, cutting and staining prior to microscopic examination by the pathologist. Under the microscope one sees the sponge network with small tissue particles and other cellular elements within the interstices of the sponge. The success of the method depends primarily on the ability to obtain by means of the sponge enough characteristic viable tissue to demonstrate the presence or absence of cancer in the lesion examined. To insure success in the highest possible number of cases, a few suggestions may prove helpful. First, the cancerous tissue must be accessible. Accordingly, if the ulcer is covered by a layer of dry necrotic material or by a dry crust, the surface should be firmly wiped with dry sterile gauze to expose the moist underlying viable tissue before the diagnostic sponges are applied. Three or four small pieces of sponge (½ inch [1.2 cm.] squares) should be rubbed firmly on both sides five or six times over the base and margins of the ulcer. If the lesion is very small, the sponge square may be cut in half to form a small rectangle, which, projecting beyond the end of a hemostat or uterine forceps, may be rubbed firmly over the ulcer. A special sponge biopsy forceps with diamond-shaped plate extending beyond the point of seizure and supporting the sponge from behind may be used to advantage. In any case, a sponge properly applied will be well soaked with tissue juice and suspended tissue particles and will provide the pathologist with ample material for examination.

RESULTS

The present series includes 24 cases of lesions of the skin and mouth, usually ulcerating, suspected of being possible carcinoma. In 11 cases the observations on sponge biopsies were negative. In 6 of these cases sponge biopsy was followed by surgical biopsy, with negative observations. In the other 5 cases no additional tissue was available. The subsequent courses, however, gave no evidence of carcinoma. Among the 13 cases of cancer, the sponge biopsy revealed positive observations in 10 and suspicious ones in 3. These cases are summarized in the accompanying table. In each of these cases the diagnosis of cancer was confirmed by surgical biopsy or examination of the surgical specimen. This series included 2 perianal epidermoid cancers, 2 early epider-

2. In performing these tests we have used both gelatin and cellulose sponge. The gelatin sponge (gelfoam® no. 12) is available through the Upjohn Company, Kalamazoo 99, Mich. The cellulose sponge (onkosponge® no. 1) and the sponge biopsy forceps are available through Histomed, Incorporated, Paterson 1, N. J.

moid cancers of the face, 1 cancer of the lip, 3 metastatic or recurrent breast cancers, 3 basal cell tumors and 2 mouth cancers.

In those cases in which a moist, ulcerating and more or less friable surface is presented, one can obtain by means of the sponge an adequate amount of tissue for microscopic examination. Certain types of lesions, however, do not lend themselves to examination by surface biopsy, whether one uses a sponge, biting forceps, scalpel or other means. These lesions include, first, the hyperkeratoses and leukoplakias which present a hard, dry, smooth surface. Second, there are the slowly growing

Results of Sponge Biopsy in 13 Cases of Cancer of the Skin and Oral Mucosa

Case No.	Patient	Sex	Age	Clinical Observations	Observations on Sponge Biopsy	Observations on Surgical Biopsy of Specimen
75	W. S.	M	60	Perianal ulcer	Abundant particles of cancer tissue	Epidermoid carcinoma
87	K. L.	F	37	Ulcer of chest wall	Many particles of cancer tissue	Breast carcinoma, recurrent
98	W. M.	M	68	Perianal ulcer	Scattered clumps of cancer cells and small fragments of cancer tissue	Epidermoid carcinoma
257	S. S.	F	58	Small ulcer behind left ear	Small particles of cancer tissue	Metastatic carcinoma; breast removed three years previously
429	J. M.	M	69	Small dry ulcer, lower lip	Epithelium showing hyperplasia and cellular atypism—suggestive of carcinoma	Surface showed atypical hyperplasia; malignant tissue in deeper portion of section; epidermoid carcinoma
466	G. R.	M	67	Small tumor nodule on lower eyelid	Tissue particles made up of darkly stained tumor cells of basal type	Basal cell tumor
542	J. W.	M	58	Ulcer on tonsil	Scattered particles of cancer tissue	Epidermoid carcinoma
546	E. S.	M	45	Ulcer of pharynx	Numerous small particles of neoplastic tissue	Lymphoepithelioma
1060	J. K.	M	48	Small ulcer on dorsum of nose	Atypical epithelium, concentric pearls—suggestive of carcinoma	Early carcinoma
1109	T. E.	M	75	Sore on ear, seven weeks	Hyperplasia and atypism of epithelium; concentric pearls—suggestive of carcinoma	Papilloma; carcinoma, grade 1
1137	M. F.	M	72	Recurrent lesion under right eye	Particles of tumor tissue of basal type	Basal cell tumor
1332	S. S.	M	64	Recurrent granulating lesion, right temple	Stratified epithelium; granulation tissue; few basal cells	Basal cell tumor
1546	J. K.	F	48	Granular reddish area on chest wall	Particles of tumor tissue; inflammatory and necrotic tissue	Breast cancer, recurrent in scar

papillary or verrucous nonulcerating lesions, the surface of which examined microscopically will present hyperplasia or moderate atypism but no evidence of neoplasia, the latter, if present, being found only in the deeper layers or in the underlying corium. Lesions which present a perfectly smooth, dry or crusted surface do not lend themselves to examination by sponge biopsy unless the dry crust is mechanically removed so as to expose the underlying moist viable tissue. Similarly, if a tumor nodule is covered by normal skin, the tumor is not accessible to the sponge and the method is not applicable unless, in the process of rubbing, the thin overlying stratified epithelium is abraded and the underlying masses of tumor tissue are absorbed in the sponge. This point was

demonstrated in case 466. The patient presented on the lower eyelid a small smooth hemispheric tumor nodule measuring about 5 mm. in diameter. A small piece of cellulose sponge held at the end of a hemo-

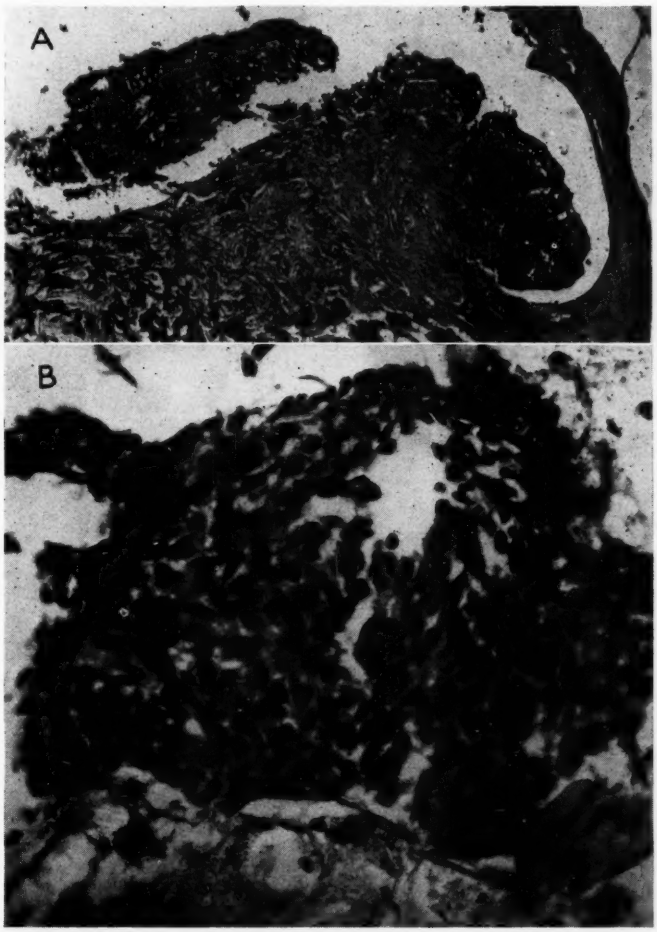

Fig. 1 (case 466).—Basal cell tumor of eyelid. *A*, surgical biopsy, low power view. Beneath the thin layer of surface epithelium (right) are large masses of closely packed basal cells. *B*, sponge biopsy, high power view. A particle of tumor tissue is made up of large darkly staining cells showing considerable variation in size and shape. The cellulose sponge is seen below.

stat was rubbed over the nodule with a circular motion about ten times until a small drop of clear fluid was seen to exude. The sponge was

placed in formaldehyde solution U. S. P., and two or three additional sponges were similarly applied. Microscopic examination (see figure 1) indicated that the intact skin overlying the basal cell tumor tissue had

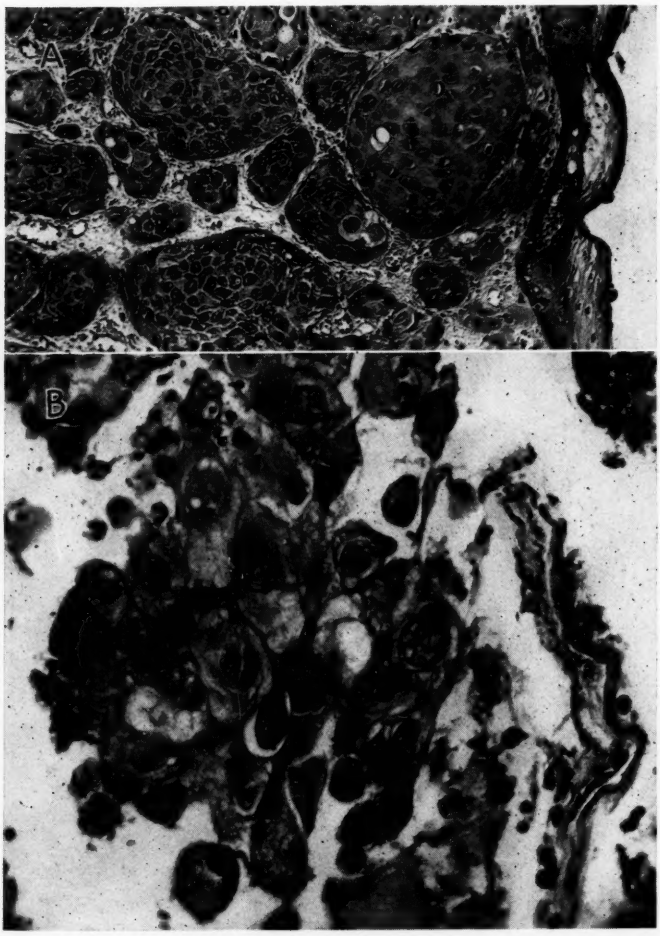

Fig. 2 (case 75).—Epidermoid carcinoma of perianal skin. *A*, surgical specimen, low power view. Solid cords of epithelial tumor cells extend into the corium. *B*, sponge biopsy, high power view. The tissue particle is made up of large bizarre epithelial tumor cells. The nuclei show variation in size and shape.

been thinned out by the growth, permitting penetration by the abrasive action of the sponge.

A typical epidermoid carcinoma of the skin was seen in case 75, of a 60 year old white man presenting an irregular ulcer in the perianal region. The sponge rubbed over the area showed an abundance of characteristic cancerous tissue particles (fig. 2 *B*). A section through

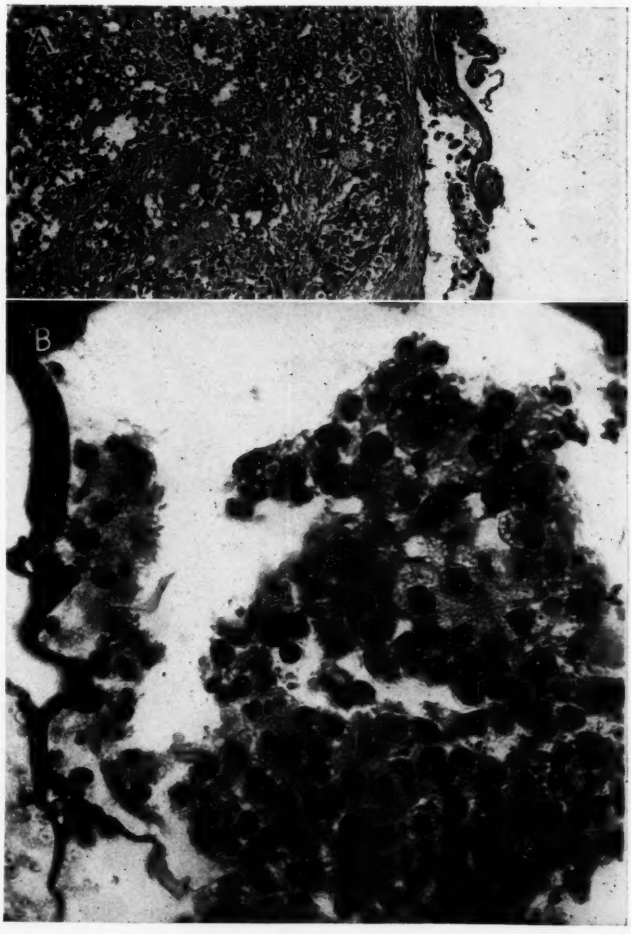

Fig. 3 (case 87).—Breast carcinoma recurrent in chest wall. *A*, surgical specimen, low power view. Beneath the thin, partly necrotic surface is an extensive growth of tumor cells forming large irregular masses. *B*, sponge biopsy, high power view. The tumor cell nuclei are large, stain darkly and vary considerably in size and shape. To the left are the slender masses of gelatin sponge.

the surgical specimen showed solid cords of tumor cells invading the corium (fig. 2 *A*).

Ulceration of the skin due to recurrent carcinoma of the breast was illustrated in case 87. The sponge biopsy (fig. 3 *B*) showed particles of cancer tissue made up of large, darkly staining anaplastic tumor cells

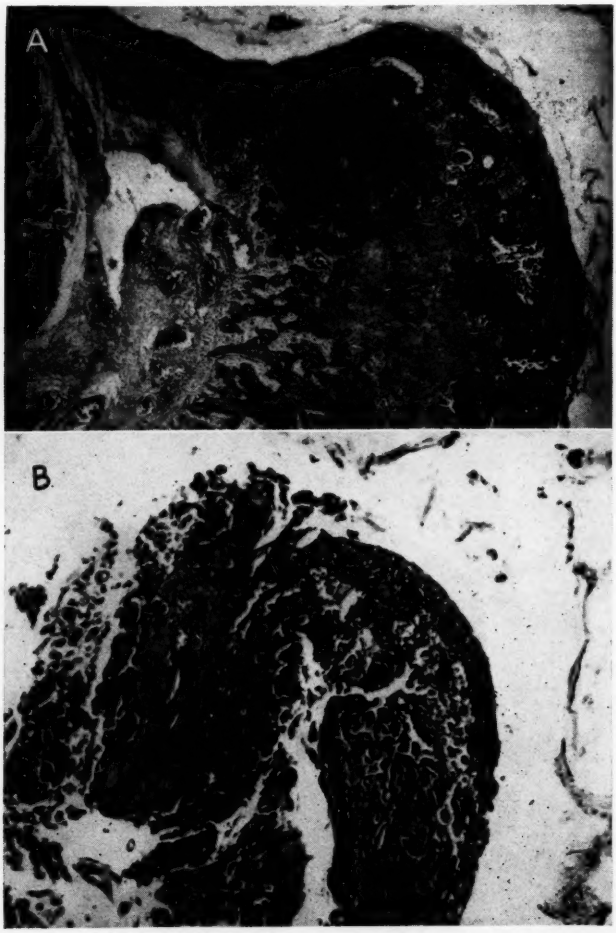

Fig. 4 (case 542).—Epidermoid carcinoma of tonsil. *A*, surgical biopsy, low power view. Above and to the left is a segment of normal mucosa. To the right is seen the tumor growth with irregular invasive strands at the deeper level. *B*, sponge biopsy, low power view. Note the large particle of partly necrotic tumor tissue. The strands of cellulose sponge are seen to the right.

showing considerable variation in size and shape. A section through the surgical specimen (fig. 3 *A*) removed at operation showed a thin

surface of necrotic material beneath which there was abundant tumor growth.

Ulceration of the tonsil due to epidermoid carcinoma was illustrated in case 542. The patient was a white man of 58 complaining of sore

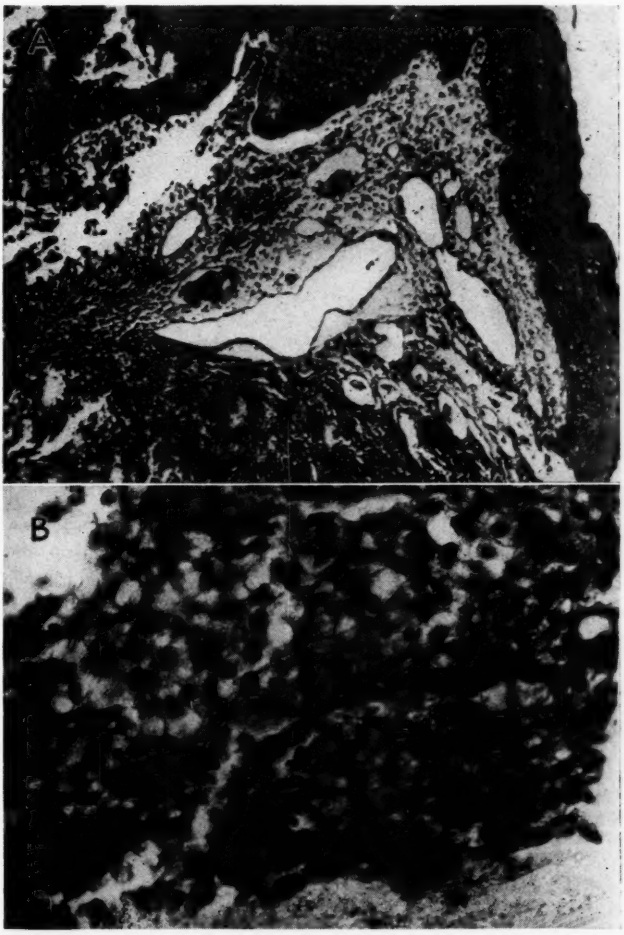

Fig. 5 (case 546).—Lymphoepithelioma of pharynx. *A*, surgical biopsy, low power view. The surface epithelium to the right extends into the deeper tissue in the upper part of the section. In the lower portion of the surgical biopsy is a diffuse growth of anaplastic tumor tissue and lymphoid tissue. Several lymphatic spaces are seen, one near the center being filled with tumor tissue. *B*, sponge biopsy, high power view. The tumor presents a diffuse growth of anaplastic darkly staining cells, some quite large, showing considerable variation in size and shape. The cellulose sponge is seen below.

throat of two years' duration. He was seen by several practitioners, who gave symptomatic treatment, gargles and the like. A sponge biopsy (fig. 4 *B*) showed particles of epidermoid carcinoma, partly necrotic. Surgical biopsy (fig. 4 *A*) showed ulcerating epidermoid carcinoma invading the submucosa.

Ulceration of the pharynx due to lymphoepithelioma was illustrated in case 546, of a white man of 45 complaining of sore throat of six months' duration. The ulcer involved the right pharynx, tonsil and

Fig. 6 (case 356).—Healing wound after treatment. Sponge biopsy, low power view. The superficial tissue was loosened by means of a small curet, after which loosening the sponge was rubbed over the surface (see text). A large particle of vascularized granulation tissue was seen, adherent to the gelatin sponge below. No cancer tissue was present.

base of the tongue. Sponge biopsy (fig. 5 *B*) showed numerous particles of tumor tissue made up of anaplastic tumor cells, darkly staining, with considerable variation in size and shape. The surgical biopsy (fig. 5 *A*) showed hyperplasia of the surface epithelium, with progressive anaplasia in the underlying tissue.

An interesting and useful modification of the technic was illustrated in case 356, of a 60 year old physician with radiodermatitis and carci-

noma which had been destroyed by electrocoagulation and curettage one month previously. The lesions on the hand appeared to be healing by granulation, and the question arose whether there was any malignant tissue left. The attending dermatologist used a curet to loosen the superficial granulation tissue and then rubbed the sponge over the surface of the wound to absorb the loosened tissue particles. Microscopic examination of the sponge showed particles of vascularized granulation tissue. No cancer tissue was present (fig. 6).

COMMENT

Cancer of the skin is the commonest of all types of cancer. Its diagnosis rests on the microscopic examination of representative samples of diseased tissue. Sponge biopsy is a simplified method of procuring small tissue particles in a form which lends itself to satisfactory routine microscopic examination. It may be used in the examination of skin lesions or mucous membrane lesions which present a moist ulcerating surface from which representative viable tissue may be detached and held by the abrasive and absorptive action of the sponge. If an ulcer is covered by necrotic material or dry crust the latter must be removed to expose the underlying moist viable tissue before the diagnostic sponge is applied. In some basal cell tumors the characteristic tumor tissue is covered by a thin layer of stratified epithelium. The latter may be penetrated by the abrasive action of the sponge or sponge biopsy forceps. One may increase the amount of tissue obtained from a hard granulating surface by loosening the superficial tissue by means of a curet before applying the diagnostic sponge. If actual curettage is used, the curettings may be rubbed into the sponge, which will serve as a vehicle for the small fragments through the numerous steps required in processing for microscopic examination. The procurement of tissue from ulcerative lesions of the oral cavity is greatly facilitated by sponge biopsy. Its use in the examination of all suspicious ulcers, however small, will result in earlier diagnosis, easier treatment and greater therapeutic success.

In the field of dermatology, sponge biopsy cannot be considered an adequate substitute for surgical biopsy in all cases. Because of its simplicity of technic, however, it merits continued study within its limited sphere of usefulness and possibly extension of that sphere as technical improvements are developed. In many instances the choice will lie not between surgical biopsy and sponge biopsy but between sponge biopsy and no biopsy. Under these circumstances, sponge biopsy, by demonstrating the presence of cancer, prepares the way for treatment, with or without preliminary surgical biopsy depending on the data available in each case. If the sponge biopsy reveals suggestive malignant

changes or uncertainty, further study is indicated in the form of repeated sponge biopsy or surgical biopsy, the reaching of a decision being aided by the advice of the pathologist.

A small lesion suspected of being a melanoma is best removed in its entirety surrounded by a wide zone of normal tissue. Superficial tissue for biopsy, whether obtained by sponge or scalpel, is not adequate for diagnosis of nonulcerating chronic papillary, verrucous or leukoplakic lesions. In such instances deep surgical biopsies are necessary.

Sponge biopsy for the dermatologist appears to have its greatest usefulness in the examination of ulcerating lesions of skin or mucous membranes suspected of being cancerous. During the trial of the test, it is best to confirm positive results by surgical biopsy and to accept negative results only if they are consistent with all other clinical and laboratory data available in each case.

SUMMARY

Sponge biopsy is the microscopic examination of tissue particles detached and absorbed by a suitable sponge firmly rubbed over the surface of an ulcer suspected of being cancerous. The sponge and absorbed contents are fixed in formaldehyde solution U. S. P., embedded in paraffin and stained with hematoxylin and eosin prior to microscopic examination by the pathologist. In a series of 13 cancers of skin and oral mucosa, the results of sponge biopsy were positive for cancer in 10 and suspicious in 3 cases. Technical suggestions and limitations of the method are discussed. The striking advantages of the method are the simplicity of the technic and the conclusiveness of the results in those cases in which the cancerous tissue is accessible to the sponge.

REITER'S DISEASE: A CASE SUCCESSFULLY TREATED WITH AUREOMYCIN

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AND
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ALTHOUGH it has been estimated [1] that 300 cases of Reiter's disease have been described in the literature, the incidence is probably much greater in that the condition is not always recognized. It is being reported more frequently now that the knowledge of the syndrome is becoming more widespread.

In the original paper by Reiter [2] the patient had initial symptoms of abdominal cramps and bloody diarrhea followed by purulent urethritis, conjunctivitis and polyarthritis. It is now known that diarrhea may not occur and that during the evolution of the triad, which may take four to eight weeks, the principal presenting symptom may be either the arthritis [3] or the conjunctivitis.[4]

The condition, which occurs in males, is worldwide in its distribution. Rosenblum [5] reported 10 cases occurring in American soldiers in the Pacific, and Bauer and Engleman,[6] 6 cases in Boston. The infecting agent is neither dysenteric nor gonococcic, and the causative organism has as yet not been identified, although spirochetes, Escherichia coli, pneumococci, Staphylococcus albus, diphtheroids, enterococci, nonhemolytic streptococci, Corynebacterium xerose (Bacillus xerosis) and Bacillus mucosus have all been indicted. More recent studies [7] have

1. Reiter's Disease, editorial, Brit. M. J. **2**:865, 1946.

2. Reiter, H.: Ueber eine bisher unerkannte Spirochaeteninfektion (Spirochaetosis arthritica), Deutsche med. Wchnschr. **42**:1535, 1916.

3. Hollander, J. L.; Fogarty, C. W., Jr.; Abrams, N. R., and Kydd, D. M.: Arthritis Resembling Reiter's Syndrome, J. A. M. A. **129**:593 (Oct. 27) 1945.

4. Vallee, B. L.: Reiter's Disease: Review of Literature, with Presentation of Case, Arch. Int. Med. **77**:295 (March) 1946.

5. Rosenblum, H. H.: So-Called Reiter's Disease, U. S. Nav. M. Bull. **44**:375, 1945.

6. Bauer, W., and Engleman, E. P.: A Syndrome of Unknown Etiology Characterized by Urethritis, Conjunctivitis and Arthritis, Tr. A. Am. Physicians **57**:307, 1942.

7. Wallerstein, R.; Vallee, B., and Turner, L.: The Possible Relationships of the Pleuropneumonia-like Organisms to Reiter's Disease, J. Infect. Dis. **79**:134, 1946.

tended to implicate a pleuropneumonia-like organism which causes arthritis in mice and rats. These organisms have been found present in the cervix, vagina and prostate, especially in patients suffering from nongonococcic type of joint disease. Suggestive high agglutination titers have been observed in some but not all patients presenting Reiter's syndrome. Beiglböck [8] expressed the opinion that the condition is of allergic origin.

During the course of the disease the enteric phase, when present, usually lasts seven to ten days. The urethritis, arthritis and conjunctivitis appear within thirty days.

With the onset of urethritis, the patient complains of frequent dysuria, hematuria and a yellow mucopurulent discharge. There may be hemorrhagic cystitis, prostatitis, prostatic abscess or vesiculitis. In some patients the condition progresses to hydronephrosis, pyelonephritis and ureteral obstruction. There may be ulcerations of the meatus or glans penis.

The arthritis affects the weight-bearing joints, which become acutely inflamed and tender, red and swollen. The hips, shoulders, wrists, fingers and vertebral column have each been described, however, as the seat of the typical migratory disease, which is associated, nonetheless, with full function and no roentgenologic evidence of destruction, although osteoporosis is sometimes seen. The occasionally concomitant hydrarthrosis spontaneously resolves itself.

The conjunctivitis is usually acute, bilateral and purulent. Although iritis, keratitis and iridocyclitis may occur, spontaneous remission without residua is the rule.

The cutaneous manifestation, when present—and perhaps it is not an acute part of the syndrome—has been labeled as a form of keratosis blennorrhagica (nongonococcic). The lesions are small, superficial vesicles, which develop into shallow ulcers and heal with hyperkeratoses, placed chiefly over the affected joints, the scrotum, the penis and the lower limbs. The skin lesions may be limited to erythema, urticaria or erythema-nodosum-like lesions. Some patients present oral manifestations, such as labial vesiculation, buccal erythemas, vesicles and superficial glossitis.

Generally speaking, the laboratory studies demonstrate an increased sedimentation rate, moderate increase in the number of polymorphonuclear cells and mild secondary hypochromic anemia. The urine may contain red cells, pus cells, some albumin and casts.

Pathologic studies are not definitive and, at the best, rule out Neisserian infection.

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8. Beiglböck, W.: Zur Behandlung der Reiterschen Krankheit (Ruhrrheumatismus), Deutsche med. Wchnschr. **69**:803, 1943; abstracted, Bull. War Med. **14**:653, 1944.

On physical examination, a moderate lymphadenopathy with occasional splenomegaly, in addition to the signs described, is observed.

The disease is self limiting, the condition lasting two to six months. Relapses are frequent, but remissions may last as long as ten years. In Vallee's [4] cases, recurrences were described and treated for sixteen years. In no case did death follow the disease itself.

According to Vallee [4] treatment with salicylates, arsenicals, mild mercurous chloride, antidysentery serum, intravenously administered typhoid vaccine, sulfonamides and penicillin was ineffective. Gold salt treatment is credited with improving the condition of some patients and recently (1948) treatment by hyperthermia was reported by Lowman and his associates [9] as successful in 2 of 5 patients.

REPORT OF A CASE

The patient, E. K., a 20 year old man, presented himself for the first time to one of us (H. K.) in June 1944, complaining of frequency, dysuria and a urethral discharge of fourteen days' duration. He presented concomitant bilateral purulent conjunctivitis and a swollen, tender left knee. The urethral smear (state laboratory) revealed no gonococci. The patient was referred to the Boston City Hospital on June 16, 1944.

First Hospital Admission.—While the patient was hospitalized, the temperature was irregularly high over a period of several weeks, reaching a maximum of 100.6 F. The laboratory studies showed findings on the blood and urine smears and culture, the electrocardiogram, roentgenograms of bones and Schwartz-McNeil tests all to be those of normal health. No gonococci were present as searched for in repeated examinations of the conjunctival and urethral discharges. Fluid from the knee was negative for gonococci on culture and on smear. Treatment consisted of the administration of sulfadiazine in 15 grain (1 Gm.) doses, four hourly after the initial dose of 30 grains (2 Gm.). The patient's condition improved, and he was discharged on July 21, 1944. The diagnosis of Reiter's disease was suggested. The hospital discharge diagnosis was unspecified urethritis—gonococcic(?).

Second Hospital Admission.—The patient returned on Sept. 30, 1944, complaining of a urethral discharge of nine days' duration associated with a pain in the right chest, worse on motion, with pain in each of the costovertebral joints. There was also swelling, redness and pain of the toes.

The physical examination showed the patient to be in normal health, except for conjunctival redness and lacrimation. There was tenderness of the left second and third sternocostal junctions. The prostate was tender, enlarged and boggy. The right elbow joint was swollen and tender; the left second and third toes and the metacorpophalangeal joints bilaterally were swollen, tender and painful.

Except for a white blood cell count of 12,600, the results of all the tests mentioned previously, all cultures and all smears were negative.

The patient was treated with sulfadiazine for one week; his condition gradually improved so that he was discharged on October 24 with a final hospital diagnosis of urethritis, conjunctivitis, arthritis—Reiter's disease(?), gonococcic infection(?).

Third Hospital Admission.—On July 10, 1946, the patient presented himself again with a urethral discharge and a history of slight joint pains but no eye

9. Lowman, E. W., and Boucek, R. J.: Reiter's Disease: Report of 5 Cases Including 2 Successfully Treated with Hyperthermia, Ann. Int. Med. **28**:1075, 1948.

symptoms since the previous admission. The urethral discharge had been persistent for the previous ten days with the left knee painful for one week and swollen and tender for one day. The right eye had begun to show irritation immediately before the patient's admission.

The physical examination showed the temperature to be 100.8 F. The physical examination revealed no abnormalities except a reddened urethral meatus. There was a urethral discharge similar to that previously described. The prostate was boggy, large and very tender. The right conjunctiva was injected with a mucopurulent yellow discharge. The left knee was swollen, hot, tender and painful. Except for a white cell count of 10,100, the results of all tests, as previously described, were within normal limits.

The patient was given penicillin, 160,000 units intramuscularly each day for five days. His condition gradually improved until his discharge thirteen days later. The final hospital diagnosis was Reiter's syndrome. Aureomycin was not available at the date of discharge.

The patient returned on Sept. 13, 1949, stating that he had been generally well since the previous hospital admission but that one week before his visit to the physician's office he had noticed a pain in his right heel, a stinging sensation on micturition and a sensation of "sand in the eyes." Several days later his heel had become swollen, the urethral discharge became apparent and the left side of the chest painful. The eyelids were sticky. Twenty-four hours before examination his left knee had become painful and stiff.

The examination showed his physical condition to be similar to that on his three hospital admissions. On the basis that he had not been helped to any degree by previous treatment including the administration of penicillin and sulfonamides, he was given aureomycin, 100 mg. per kilogram for twenty-four hours on Sept. 15, 1949, the dose being reduced to 75 mg. per kilogram on September 16 and to 50 mg. per kilogram on September 17. The patient showed an immediate improvement, being completely free of urethral, eye and joint symptoms by the third day. When seen twenty-five days later, he was completely objectively and subjectively well.

Subsequent search of the pertinent American literature unearthed no report of similar treatment. In the British literature, Willcox and Findlay [10] were found to have treated 2 patients with gonococcic and 4 with nonspecific urethritis with 1,000 to 2,000 mg. of aureomycin orally for twenty-four to sixty hours, with 3 of the nonspecifically infected patients responding, one patient requiring a second course of treatment. In the 3 responsive patients, pleuropneumonia-like organisms were recorded as being present before, but not after, treatment. None presented any of the symptoms or signs of Reiter's disease.

The patient's response would seem to suggest that the causative agent be sought among the viruses and organisms affected by aureomycin or that the pleuropneumonia-like organisms often present are susceptible to aureomycin. It is planned to treat further relapses, if any, by the same means.

SUMMARY

A case of Reiter's disease, which did not respond to treatment with sulfonamides and penicillin, presented a complete remission of urethral, conjunctival and joint symptoms when aureomycin was given orally in doses of 50 to 100 mg. per kilogram for three days.

10. Willcox, R. R., and Findlay, G. M.: Urethritis, Gonococcal and Nonspecific, Treated with Aureomycin, Brit. M. J. **2**:257, 1949.

ATYPICAL BLUE NEVUS

Report of a Case

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THE HITHERTO reported cases of atypical blue nevus may be divided histologically into the following three categories:

(1) Those with the combination of ordinary pigmented nevus cells occurring directly beneath the epidermis and fusiform blue nevus cells in the deeper layer of the cutis. In some areas the two types of nevus cells may be intimately mixed with each other. Such cases have been described by Stranz [1] (3 cases), Armuzzi [2] (3 cases), Kreibich [3] (1 case) and Montgomery and Kahler [4] (4 cases). Strictly speaking, it is doubtful whether the cases of Dubreuilh and Petges,[5] Ribbert,[6] Fischer [7] and Bezecny,[8] sometimes cited by others, actually belong to this category.

(2) Cases with the combination of increased pigmented cells in the epidermis and blue nevus cells in the cutis, where the two types of cells are separated by a definite border zone, at least in a major portion of the lesion. Two of the cases of Montgomery and Kahler [4] belong to this category.

From the Dermatological Clinic, Medical Faculty, University of Tokyo, Dr. K. Kitamura, director.

1. Stranz, H.: Blue Nevus, Arch. f. Dermat. u. Syph. **147**:131, 1924.

2. Armuzzi, G.: Contribution to the Knowledge of Blue Nevus, abstracted, Zentralbl. f. Haut- u. Geschlechtskr. **25**:45, 1928.

3. Kreibich, C.: Blue Nevus, Arch. f. Dermat. u. Syph. **153**:804, 1921.

4. Montgomery, H., and Kahler, J. E.: The Blue Nevus (Jadassohn-Tièche): Its Distinction from Ordinary Moles and Malignant Melanomas, Am. J. Cancer **36**:527, 1939.

5. (*a*) Dubreuilh, W., and Petges, G.: The Blue Nevus, Ann. de dermat. et syph. **2**:552, 1911. (*b*) Miescher, G.: The Blue Nevus, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1933, vol. 12, pt. 3, p. 1041.

6. Ribbert: A Small Chromatophoroma of the Skin, Virchows Arch. f. path. Anat. **208**:360, 1912.

7. Fischer, E.: Microscopic Proof of Epithelial Origin of Cells of the "Blue Nevus," Dermat. Wchnschr. **89**:1755, 1929.

8. Bezecny, R.: Contribution to the Question of the Blue Nevus, Arch. f. Dermat. u. Syph. **164**:314, 1931.

(3) Cases in which there is the combination of blue nevus, fibromatous and myomatous tissue, such as 1 of the cases reported by Tièche.[9]

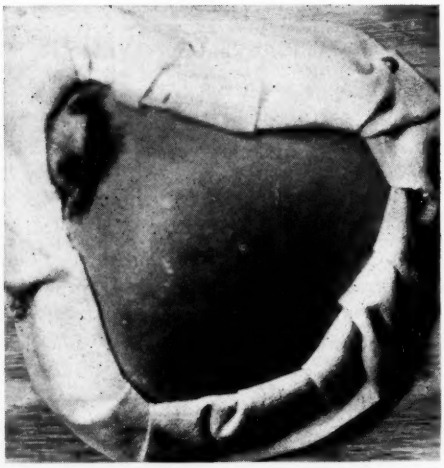

Fig. 1.—Clinical appearance of the lesion.

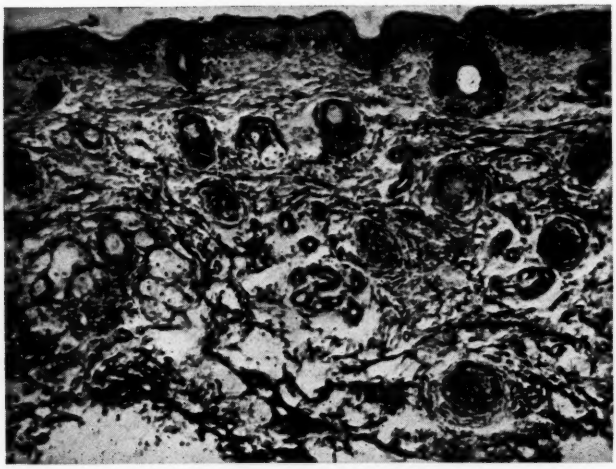

Fig. 2.—Low power view of a section stained with hematoxylin and eosin.

9. Tièche, M.: On Benign Melanomas, Virchows Arch. f. path. Anat. **186**:212, 1906.

REPORT OF CASE

A 1 year old boy came to the Dermatological Clinic of the University of Tokyo on Oct. 10, 1949. The parents stated that the lesion had been present since birth.

Examination.—There was a pigmented area with an irregular contour on the boundary of the nose and the left cheek (fig. 1). It was 3.5 cm. by 1.5 cm. The appearance of the surface and the consistency were normal. The color was bluish brown for the most part, but on the upper and lateral parts there were narrow blue zones adjacent to the normal skin.

Histologic Observations.—A small specimen was taken from the bluish brown part, cut in serial sections and examined with the use of hematoxylin and eosin, van Gieson's stain, Weigert's stain for elastic tissue and Becker's [10] silver stain for melanin (figs. 2, 3 and 4). The epidermis was not uniformly pigmented. Besides

Fig. 3.—High power view of a section stained with silver nitrate and counterstained with methyl green and pyronin. Dendritic cells are demonstrated.

the pigmented cells of the basal cell type there were many dendritic cells with vacuoles in their cell body. In the deeper two thirds of the cutis there occurred elongated bandlike blue nevus cells which extended to the subcutis in some areas. They ran parallel to the collagen and elastic fibers and were intimately mixed with those fibers. Stray blue nevus cells occurred also in the upper third of the cutis, sometimes accompanied with blood vessels reaching in some areas to the vicinity of the epidermis, but neither connection with nor transition to the epidermis cells could be found. No ordinary nevus cell was found in either the epidermis or the cutis.

10. Becker, S. W.: Melanin Pigmentation: A Systematic Study of the Pigment of the Human Skin and Upper Mucous Membranes, with Special Consideration of Pigmented Dendritic Cells, Arch. Dermat. & Syph. **16**:259 (Sept.) 1927.

COMMENT

Most [11] dermatologists have stated the opinion that the blue nevus cells are of mesodermal origin, belonging [12] to the independent pigment system of the cutis.[13] The reports previously cited, of cases in which the blue nevus cells and ordinary pigmented nevus cells are intermingled in the same lesion, may appear to be evidence that the two kinds of nevus cells are of the same origin; however, the ordinary pigmented nevus cells have in general a tendency to be intermingled with the tissue of the

Fig. 4.—High power view, with the same staining as in figure 3. Almost all the pigmented cells are of the basal cell type.

cutis which is of mesodermal origin, i. e., connective tissue and sometimes the arrectores pilorum. Such a tendency of nevus cells, interpreted by

11. Montgomery and Kahler.[4] Tièche.[10] Ito, M.: On the Pigmented Cells of Mongolian Spot and Blue Nevus, Byoshitsu to Kenkyushitsu (Clinic and Laboratory) **5**:21, 1947.

12. Miescher.[5b] Sato, K.: Contribution to the Knowledge of the "Blue Nevus," Dermat. Wchnschr. **73**:1073, 1921.

13. Bloch, B.: The Pigment, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 1, pt. 1, p. 434.

me [14] as an expression of their being of "embryonal type, but high ripeness of tissue" (Steinbiss),[15] i. e., atypical without being malignant, has been recognized by many dermatopathologists,[16] although sometimes otherwise interpreted by them. At any rate, the cells or tissue which is intimately intermingled with ordinary nevus cells is not necessarily of ectodermal origin. The fact that no transitional form has ever been found between the two kinds of nevus cells rather favors the concept of their different origin.

In the cases of blue nevus with increased pigmented cells in the epidermis, the situation is somewhat different because the pigmented cells of the epidermis, owing to their nature, have no tendency to intermingle with connective tissue. Therefore, if such hyperpigmented epidermis is connected with blue nevus, as in the cases of Montgomery and Kahler,[4] such an observation may support the concept of the epidermal origin of the blue nevus. Montgomery and Kahler, however, pointed out in their cases also the possibility of the simultaneous stimulation of epidermal and mesodermal melanoblasts. In the present case, the blue nevus cells were always isolated from the hyperpigmented epidermis by a definite border zone which was considerably thick in a major part of the lesion. A transition between the pigment cells of the epidermis and blue nevus cells could not be found. This observation favors the concept of simultaneous stimulation of epidermal and mesodermal melanoblasts.

SUMMARY

A case of atypical blue nevus was histologically studied. Previously reported studies on the atypical blue nevus are discussed from the histogenetic viewpoint. The observations on the present case do not interfere with the concept of the different origin of the epidermal melanoblast and the blue nevus cell.

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14. Kawamura, T., and Yamada, M.: The Histological Structure of the Pigmented Cell Nevus, with Special Regard to the Relation Between the Nevus Cells and Mesenchymal Components of the Cutis, Jap. J. Dermat. & Venereol., to be published.

15. Steinbiss, W.: Rhabdomyomas of the Heart and Their Relations to the Tuberous Sclerosis of the Brain, Virchows Arch. f. path Anat. **243**:22, 1923.

16. Miescher, G.: Benign Melanomas of Epidermal Origin: The Pigmented Cell Nevus, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1933, vol. 12, pt. 3, p. 1013. Miescher, G., and von Albertini, A.: Histology of 100 Pigmentary Nevi Studied by the Methods of Masson, Bull. Soc. franç. de dermat. et syph. (Réunion dermat., Strasbourg) **42**: 1265, 1935. John, F.: Studies on the Histogenesis of the Nevi, Arch. f. Dermat. u. Syph. **178**:607, 1939.

ECZEMA OF THE HANDS FROM WOODEN-HANDLED OBJECTS

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ONE OF THE rare causes of recurrent eczema of the hands and fingers is an allergic dermatitis due to wooden-handled objects. Dermatologists should be ever mindful of this infrequent causative factor in dealing with persistent or recurring vesicular eczemas of the hands. Three cases have been proved in the past five years by one of us (J. B. H.). After we had talked with three colleagues about this novel cause of eczema of the hands, each one discovered a similar case. The wood at fault was cocobolo wood.

Cocobolo wood is a Central American timber of the genus Dalbergia. Included in this genus are over two hundred and fifty species of trees and scandent shrubs widely distributed in the tropical regions of the world. There are some fifteen species which yield timber noted for good technical qualities and richness of color and grain. There are at least seven species of Dalbergia of economic importance for their timber in tropical America. Cocobolo wood comes chiefly from Costa Rica and Nicaragua but is found throughout the western coastal areas of Central America and southern Mexico. The following species are known to be the principal sources of cocobolo wood: Dalbergia retusa, Dalbergia hypoleuca, Dalbergia granadillo, Dalbergia pacifica and Dalbergia lineata.[1]

In recent years South American rosewoods have largely replaced cocobolo wood for handles used in the cutlery trade. Correspondence with twenty-six manufacturers of cutlery revealed that only two manufacturers are still employing cocobolo wood for cutlery handles, chiefly because of the difficulty in obtaining an adequate supply of reasonably priced, good grade wood. It was learned also that contact dermatitis from rosewood in workers engaged in the cutlery trade infrequently occurs. One manufacturer reported 3 cases of dermatitis due to con-

1. Record, S. J., and Hess, R. W.: Timbers of the New World, New Haven, Conn., Yale University Press, 1947, p. 252-258.

tact with rosewood and its dust. Rosewood, like cocobolo wood, can be expected to be a rare cause of contact dermatitis of the hands and exposed areas.[2]

SOURCES OF CONTACT WITH COCOBOLO WOOD

Cocobolo wood may be contacted by handling one of the following objects or in trades in which these objects are used or made: carving knives and forks, pocket knives and butcher knives, handles of spatulas, small tools, brush backs, inlaid Tunbridge ware, scales, musical and scientific instruments, launch wheel drums, steering wheels, small attachments to automobiles, launches, policemen's clubs, carpenters' spirit levels, plane handles, canes, umbrella handles, billiard cues and tables, small jewelry and novelties, rosary beads, forks, spoons, chessmen, turnery, buttons, knobs and handles of pressure cookers.

REPORT OF CASES

CASE 1.—Mrs. J. K.[3] presented an eczematous dermatitis of three and a half years' duration involving the eyelids, perioral sites and the palm and fingers of the right hand. Acute attacks were frequent and took place both at home and while the patient was traveling with her husband in West Texas. A lengthy interview uncovered no clues suggestive of contactants. Nail lacquer, hair tonics, wave sets, cosmetics and perfumes, drugs used both locally and about the mouth had been discontinued for months without influencing the eruption. Patch tests with a number of key chemicals and almost by accident with cocobolo wood shavings were made. Within twenty-four hours a severe focal flare-up of the original areas of dermatitis was noted. Soothing topical therapy and bed rest for approximately one week were needed.

Mrs. J. K. became sensitized to cocobolo wood from contacts with knife handles made of this wood. When away from home, she ate steak frequently and the steak knives used had cocobolo wood handles, that fact accounting for the activity of the eczema while the patient was away from home. The eczema healed and the patient remained well after the cocobolo-handled cutlery was successfully avoided.

CASE 2.—Mrs. J. (observed in private practice with Dr. Bedford Shelmire) was seen on several occasions with a recurring vesicular eczema involving the hands only, and it had been observed that the right hand was slightly more involved than the left. Mrs. J. had also observed that the eruption healed completely if she was away from her home several days. The morphologic features of the eruption suggested a dyshidrosis, but the condition could not be differentiated from a vesicular

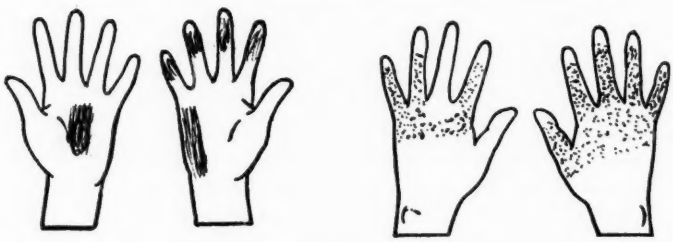
2. Touraine, A.; Ménétrel, B., and Jouenne, M.: Dermatite eczémateuse du palissandre, Bull. Soc. franç. de dermat. et syph. **41:** 1969-1972 (Dec.) 1934. Tottie, M.: Jacaranda als Ursache von Dermatitiden, Acta dermat.-venereol. **19:**235-245, 1939. Barroso, C.: Dermatite eczematosa de tipo dermocontacto provocada pela serragem de caviúna (Dalbergia nigra), Hospital, Rio de Janiero **31:** 291 (Feb.) 1947. Escartefigue, M. M.: Dermo-épidermite eczématiforme du cou et des avant-bras consécutive au port au d'un collier et d'un bracelet en bois de palissandre, Bull. Soc. franç. de dermat. et syph. **42:** 670-671 (April) 1935.

3. Howell, J. B.: Contact Dermatitis: Analysis or Tabulation of All Cases Proved in Single Year, Arch. Dermat. & Syph. **53:**265-277 (March) 1946.

contact dermatitis, a dermatophytid or vesicular penicillin dermatitis on the basis of distribution or clinical appearance of the eruption alone. The eruption continued for one year.

After the enlightening experience with case 1, the problem of Mrs. J. was recalled, and, since she lived out of town, she was written regarding the possibility that the eczema was due to cocobolo wood. An account of case 1 was included, and cocobolo wood shavings for self testing were sent. After no reply had been received in four weeks, a second letter was sent. A prompt answer followed, stating that the patient thought a wooden-handled butcher knife was at fault; her hands were well at the time but she had been unable to write until just recently. The test with the cocobolo wood had been done on the right arm, and the resulting reaction had been so intense that the use of the arm for writing had been impractical. The eruption remained well after the patient discarded the butcher knife with the cocobolo wood handle which she had frequently used in her kitchen.

CASE 3.—Mrs. E. T. H. was seen with a recurrent vesicular eczema of thirteen years' duration involving the hands only. She had noticeable hyperhidrosis of the palms and soles. The eruption was characterized by erythematous papules and confluent papulovesicles on the backs of the hands and by pinpoint-sized to pinhead-



Distribution of the eruption in case 3.

sized clear vesicles on the palms and palmar surfaces of the fingers. The morphologic features but not the distribution (figure) suggested dyshidrosis. It was learned that the dermatitis disappeared during periods in which Mrs. E. T. H. did no housework.

Patch test reactions to an ether extract of cocobolo wood diluted in corn oil were positive. Contact tests to shavings from a spatula handle and a butcher knife handle elicited positive reactions. After the patient discarded these two items, the eczema promptly disappeared. Two recurrences followed during the next four months. The first was traced to the handling of a wooden-handled hair brush, and the second, to contact with the wooden handle of a presto® cooker. No recurrence had been observed for over one year at the time of writing.

REVIEW OF THE LITERATURE

Attention was first called to the sensitizing potential or quality of cocobolo wood by Stern [4] in 1891. He reported a dermatitis of the lips in 2 flute players contacting cocobolo wood in the mouthpieces of their instruments.

4. Stern, E., cited by Levin, S. J.: J. Allergy **12**:489-501 (July) 1941.

Samuel J. Levin [5] claimed priority in reporting a dermatitis due to the wooden handles of kitchen knives. The lead to the causation by the knife handle in his case was gleaned from the patient's history of an earlier contact dermatitis from a wooden bracelet also made of cocobolo wood.

Our experience with recurrent vesicular eczemas of the hands due to cocobolo wood confirms the observations of Levin.

Cocobolo wood dermatitis of various areas, not primarily the hands, is well known [6] and was reported by MacKee [7] in 1913 in a man who scraped handles and backs of hair brushes. Schropl's [8] case was that of a man employed in a flute factory where he was exposed to cocobolo wood dust. Abramowitz and Swarts [9] noted cocobolo wood dermatitis of the face, scalp, neck, arms and backs of the knees in a man who had been carving cocobolo wood as a hobby. Levin and Behrman [10] reported dermatitis of the forarm of a woman who had been wearing a bracelet made of cocobolo wood.

Dr. Ettore Ciampolini of the Graduate School of Yale University studied the problem of dermititis in men who worked the cocobolo wood. He stated the opinion that the irritating principle is contained in the oil. The oil is soluble in alkali but is precipitated by acids. According to Ciampolini, workmen whose perspiration gives an acid reaction seem resistant to the dermatitis while an alkaline reaction indicates susceptibility since the alkali dissolves the irritating agent and permits its entrance into the pores of the skin.

The theory that an acid sweat protects a person against sensitization to cocobolo wood is very interesting. Further study and investigation are needed for confirmation. If the theory should be found true, the mechanism would represent the rare phenomenon of the p_H of the skin being a major factor in discouraging a contactant from sensitizing the skin.

Workers who have acquired a dermatitis in most instances must permanently cease working in the room where they are exposed to the dust. Many workers appear to be resistant to a dermatitis while others are readily susceptible. Once a person acquires a dermatitis, instead of

5. Levin, S. J.: Cocobolo Wood Dermatitis, J. Allergy **12**:489-501 (July) 1941.

6. Modlmayr: Palisander bzw. Cocoboloholz Dermatitis, Zentralbl. f. Haut- u. Geschlechtskr. **36**:728 (April 5) 1931.

7. MacKee, G. M.: Dermatitis Venenata from Cocobolo Wood, J. Cutan. Dis. **31**:582 (Aug.) 1913.

8. Schropl, E.: Eczema from Granadillo Wood, Urol. & Cutan. Rev. **39**:571-572 (Aug.) 1935.

9. Abramowitz, E. W., and Swarts, W. B.: Dermatitis Due to Cocobolo Wood, Arch. Dermat. & Syph. **37**:441-443 (March) 1938.

10. Levin, O. L., and Behrman, H. T.: Bracelet Dermatitis, New York State J. Med. **39**:1877-1879 (Oct.) 1939.

acquiring immunity by repeated exposure, he seems to become all the more susceptible. In factories in which cocobolo wood has been used there are few cases of dermatitis because an immune working force is gradually acquired in that department of the plant.

COMMENT

The appearance of cocobolo wood dermititis of the hands is a protean eczematous eruption, and only by considering all the etiologic possibilities of hand eruptions can one solve the problem. The eruption is one in which differentiation from a mild allergic eruption of the hands caused by the parenteral administration of penicillin or poison ivy extract, a dermatophytid, dyshidrosis, a vesicular hand eruption due to foods or dermatitis from contactants cannot be made on its morphologic features and distribution alone.

In 2 of the cases the eruption was confined entirely to the hands. The right hand was involved to a greater degree than the left.

Emotional factors were prominent in the background of Mrs. E. T. H. and easily could have been incorrectly evaluated as the principal reason for the recurrent episodes of eczema.

Patch testing with cocobolo wood shavings in persons suspected of being allergic to the wood was followed on two occasions by a severe local reaction at the test site and an exacerbation or activation of original areas of involvement.

An ether extract and corn oil dilution of the oleoresin is preferred for contact testing. Shavings from the handles of suspected objects in use for some time appear safe since some of the oil probably has been lost.

Medical Arts Building (1).

OSTEOMA CUTIS AS A RESULT OF SEVERE ACNE VULGARIS OF LONG DURATION

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OSTEOMA cutis has been rated as a rare condition. When it occurs as a metaplastic sequela of preexisting lesions like nevi and epitheliomas or of chronic trauma as in myositis ossificans or as a neoplasm in an apparently normal locus, it does indeed seem to be a rare event. There is, however, a form of osteoma cutis which follows prolonged severe acne with scarring and is consequently rather common.[1]

Since uncovering a case of this condition in the skin of the face [2] of a patient with considerable scarring from severe acne vulgaris of long duration, I have examined roentgenologically the facial skin of several other patients of similar appearance. Roentgenographic evidence of calcareous deposits was found in four of six such examinations. In three of these the deposits were very sparse and would have been missed if not specifically sought. In 1 case, however, there was a picture nearly as extensive as in the previously reported case. It is illustrated by a contact reproduction of the roentgenogram of the soft parts of the skin of the chin (frontal view) in figure 1. Figure 2 shows the comparable area (lateral view) as observed in the first case.

In Hopkins' case [1] the condition was discovered when a tiny bony mass was encountered during incision of a pustule. Further search led to the extraction of more than a score of such pellets from other papules and pustules. Biopsy showed their structure to be typical of bone. In Costello's case [3] of a solitary osteoma, attention was directed to the possibility by the presence of a hard milium-like lesion. In my first case no objective sign on the skin suggested the condition, but the patient submitted several spherules of a bony, hard substance which could have been taken for grains of coarse sand. Histologic processing after decalcification showed them to be bone. The patient claimed that

1. Hopkins, J. G.: Multiple Miliary Osteomas of the Skin: Report of a Case, Arch. Dermat. & Syph. **18**:706 (Nov.) 1928.

2. Leider, M.: Osteoma Cutis: Report of a Case, Arch. Dermat. & Syph. **58**:168 (Aug.) 1948.

3. Costello, M.: Metaplasia of Bone: Report of a Case, Arch. Dermat. & Syph. **56**:536 (Oct.) 1947.

she dug these specimens out of the skin of her face, and this incredible story proved to be true on roentgenographic examination and biopsy.

In none of the present cases could the osteomas be felt by the gross sense of touch, nor was there anything visible on the skin to point to such an abnormality. The roentgenographic examinations were under-

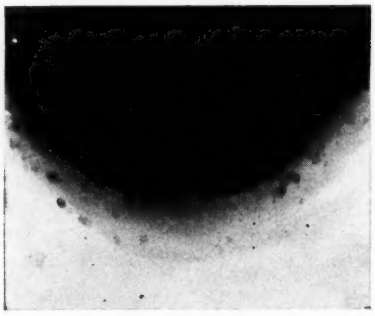

Fig. 1.—Roentgenographic appearance of calcareous deposits in osteoma cutis.

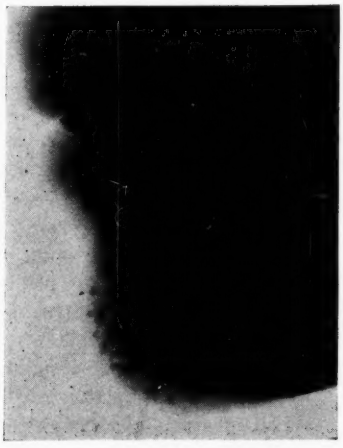

Fig. 2.—Roentgenographic appearance of calcareous deposits in osteoma cutis.

taken merely on the theory derived from the original experience that severe acne with scarring is sometimes attended by ossification. No biopsies were performed in these cases, but the similarities of the roentgenographic appearances in these cases and in the original one suggests that these, too, are cases of true bone formation rather than of some form of simple calcinosis.

Observations in these cases make it appear likely that the chronic inflammation or other irritative effects of severe acne of long duration lead to neoplasia of bone or metaplasia of certain cutaneous structures into bone. In neither Hopkins' case nor in mine did histologic study give any clue to the mechanism of a neoplasia, nor was there anything to indicate whether particular cutaneous structures had been ossified. Hair follicles, sebaceous and sweat glands and collagen bundles seemed normal. There was no inflammatory reaction around the osteomas in my case. They appeared quite as though they belonged. One is simply left with the conclusion that osteoma cutis of this type is associated with severe, persistent, scarring acne.

CRYOTHERAPY: A NEW METHOD

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CARBON dioxide cryotherapy was introduced by Pusey [1] in 1907 for the treatment of cutaneous lesions and has enjoyed well deserved popularity among dermatologists through the ensuing years. In 1904 Roozeboom [2] found the temperature of solid carbon dioxide in acetone to be — 88 C. Wohl and Losanitsch [3] in 1905 found the temperature to be — 86 C. Thiel and Caspar [4] found that solid carbon dioxide in saturated solution in alcohol, ether and acetone approximated — 80 C. However, Lange [5] cited the temperature of alcohol with solid carbon dioxide as — 72 C., of chloroform with solid carbon dioxide as — 77 C. and of ether with solid carbon dioxide as — 100 C. Acetone with solid carbon dioxide was not mentioned. On the basis of these data the temperature of carbon dioxide cryotherapy is believed to be in the vicinity of — 80 C.

Solid carbon dioxide is usually used by dermatologists as "ice" or compressed "snow," or mixed with acetone to form a "slush." For several years my associates and I have utilized a new technic of cryotherapy in the treatment of acne vulgaris, hemangiomas, chronic discoid lupus erythematosus and plantar warts. The equipment consists of a set of pyrex® test tubes of varying diameters (10, 13, 16, 20 and 25 mm.), a cylinder of carbon dioxide gas, a chamois cloth and acetone. A test tube is selected of approximately the size of the area to be treated. For extensive lesions, the largest test tube is used and applied in multiple

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From the Department of Dermatology, Hospital of the University of Pennsylvania, Donald M. Pillsbury, M.D., director.

1. Pusey, W. A.: The Use of Carbon Dioxide Snow in the Treatment of Nevi and Other Lesions of the Skin: Preliminary Report, J. A. M. A. **49**:1354 (Oct. 19) 1907.

2. Roozeboom, B.: Die heterogenen Gleichgewichte vom Standpunkte der Phasenlehre, Braunschweig, F. Vieweg & Sohn, 1904, no. 2, p. 341.

3. Wohl, T., and Losanitsch, H.: Ber. d. deutsch. chem. Gesellsch. **38**:4149, 1905.

4. Thiel, A., and Caspar, E.: Ztschr. f. phys. Chem. **86**:257, 1914.

5. Lange, N. A.: Handbook of Chemistry, ed. 7, Sandusky, Ohio, Handbook Publishers, Inc., 1949, p. 1388.

areas with a rolling motion. One to 2 cc. of acetone is poured into the test tube, and loose, noncompressed solid carbon dioxide, as obtained from the cylinder with a chamois collecting bag, is scooped into the tube, care being taken not to invert the tube sufficiently so that the acetone spills. Within a few moments a frost appears on the outside of the tube, which is held in a chamois cloth to avoid freezing the fingers. The base or side of the tube is applied directly to the lesion for 3 to 120 seconds with light or firm pressure.

ADVANTAGES OF NEW METHOD

After some years of experience with this method I feel that it has certain advantages over the use of solid carbon dioxide in the forms of "ice," "snow" and "slush":

The procedure is less painful, as has been attested to by numerous patients. The burning action of acetone is obviated by the fact that only the cold pyrex® test tube touches the skin.

There can be better control of treatment, which is confined to the area in need of it. There is no danger of carbon dioxide particles falling into the eyes or onto unaffected skin. Goggles and protective pads need not be used in treatment of face lesions. On the dorsum of the tongue this method can be used with ease and safety.

As firm pressure as is desired can be safely and easily applied. This advantage is of especial value in the treatment of hemangiomas, plantar warts and deep, indurated acne lesions.

Preparation is less time consuming, and less equipment is needed. There is no need to compress and shape the "snow" or "ice," or to mix the "slush," and swabs, mortars and cutting and shaping instruments are not needed.

Only a small amount of solid carbon dioxide is used.

In the treatment of deep lesions, this method appears to permit deeper penetration of the freezing action, with less severe superficial freezing and destruction of the epidermis.

The method is not suitable for treatment of lesions of less than 8 mm. in diameter, as solid carbon dioxide is only with difficulty introduced into a test tube of so small a diameter. The solid carbon dioxide obtained with the Kidde® apparatus or shaped carbon dioxide "ice" is preferable for small lesions. Extensive areas can, however, be treated with the test tube method almost as rapidly as with "slush" by the use of the largest size tube in multiple areas. Skin overlying soft tissues is treated more easily than skin overlying bone, as with the former the rounded base or side of the tube sinks into the skin and gives uniform freezing

action. On the forehead the test tube method has been found inferior to the application of carbon dioxide in the cake or "slush" form. On the thin mucous membrane of the lips and the buccal surface of the cheeks the freezing tube adheres to the moist surface and the mucous membrane is torn when the tube is removed. However, lesions on the dorsum of the tongue may be satisfactorily treated.

SUMMARY

A new method of cryotherapy is described, which has certain advantages over methods now in use.

2031 Pine Street (3).

REMOVAL OF SEBACEOUS CYSTS BY ELECTROSURGICAL MEANS

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NEW YORK
AND
NATHAN PENSKY, M.D.
BROOKLYN

MANY METHODS have been suggested for removal of sebaceous cysts of the skin, and each of these aims to achieve the best cosmetic result. A procedure can be termed successful when with the least inconvenience to the patient it eliminates the cyst permanently in the greatest percentage of cases and leaves a minimal amount of scarring. The incision scar which follows surgical operation with the scalpel is quite frequently undesirable. Moreover, it is also often impossible to enucleate infected cysts totally. Many methods have been described to cope with these factors. Before describing a simple electrosurgical method which we have found to be successful in a large series of cases, we here submit a review of several important procedures which have been suggested thus far.

HISTORICAL REVIEW

Dubois-Havenith and Maes [1] described a method of destroying cysts by means of galvanic electrolysis. They cited their experience with several hundred cysts treated over a period of about fifteen years. These authors stressed the advantages offered by this method and stated that there was practically no scarring.

Jean Meyer and Jean Saidman [2] also reported their results with electrolysis. They expressed the opinion that, of the numerous procedures suggested, no method equaled electrolysis, as the entire reaction of the current took effect below the skin level and as a result the skin was

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1. Dubois-Havenith and Maes: Traitement des kystes sébacés par l'électrolyse cuprique, Presse méd. belge **64**:223 (March 24) 1912.

2. Meyer, J., and Saidman, J.: Précis de physiothérapie et de petite chirurgie dermatologiques, Paris, Gaston Doin, 1931.

hardly altered. They treated all types of cystic lesions, including small sebaceous cysts, synovial cysts and secondarily infected acne cysts, with this method.

Danna [3] described his method of dealing with recurrent sebaceous cysts of the face. Puzzled as how to deal with such lesions on the face of a "rather attractive woman," it occurred to him that by the use of a diathermy current passing through a needle inserted in the center of the top of a cyst a slough could be produced which would heal by cicatrization. He used a sharp needle which was introduced into the midpoint of the top of the cyst. The needle point of the active electrode barely protruded into the cavity. The diathermy current was turned on until a whitish eschar formed around the needle. Danna stated the belief that the diameter of the slough produced should be approximately one-fourth to one-third the diameter of the cyst. He employed one puncture for cysts up to 3 cm. and two or more punctures for the larger cysts. The monopolar desiccating current was used for the small cysts and the bipolar coagulating current for the larger ones. In a few days the slough separated, leaving the cavity open and draining, and in a few weeks the cyst shrank and melted away. The final result was a depression resembling the opening of a recently emptied blackhead.

Callaway [4] treated cysts by incision of the lesion with a surgical blade. He then expressed the fatty sebaceous material and filled the cavity with tincture of iodine. The procedure was repeated in three to four weeks. The end result was fibrosis of the sac membrane with destruction of the cyst.

Newton, cited by Anderson,[5] injected procaine into the roof of the cyst. He then incised the wall either with a scalpel or by means of electrodesiccation and expressed the contents. The interior of the cavity was then swabbed with 95 per cent phenol. He used alcohol to neutralize any phenol touching the skin. A drain was then inserted and replaced daily for three or four days. Healing was accomplished with little or no scar.

The literature is replete with many other methods. Lermoyez [6] injected ether into the sac. Fishman [7] inserted a solid silver nitrate stick into the cyst cavity.

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3. Danna, J. A.: A Simple Treatment for Sebaceous Cyst, New Orleans M. & S. J. **98**:5 (July) 1945.

4. Callaway, J. L.: A Treatment for Sebaceous Cysts, South. Med. & Surg. **109**:42 (Feb.) 1947.

5. Anderson, N. P.: Cysts, Sinuses and Fistulas of Dermatologic Interest, J. A. M. A. **135**:607 (Nov. 8) 1947.

6. Lermoyez, M.: Du traitement des loupes par les injections d'éther, Bull. gén. de thérap. **105**:454 (Nov. 30) 1883.

7. Fishman, J.: Treatment of Infected Sebaceous Cysts, U. S. Nav. M. Bull. **46**:917 (June) 1946.

In a review of 236 cases of sebaceous cysts treated at the Mayo Clinic, Caylor [8] divided them according to their anatomic location. He found that sebaceous cysts were commonest on the scalp (28.13 per cent) and that next in frequency were those on the face. It is also interesting to note that 3.44 per cent of the lesions in Caylor's series underwent malignant degeneration. Bishop,[9] in another study, found that 9.2 per cent of 109 sebaceous cysts had undergone malignant degeneration. These facts pose the thought-provoking and serious problem of whether a cyst should be left alone or whether it should be eradicated as soon as possible.

Fig. 1.—Illustrating sebaceous cyst on left cheek, of one year's duration, with the crust which had already replaced the blanched area one week after operation. The blanched area was made somewhat wider than usual so that the unusually large cyst could be evacuated in toto (see figure 2).

TECHNIC AND RESULTS

We wish to report a simplified method used in a series of over 250 cases of sebaceous cysts treated at the Skin and Cancer Unit of the New York University–Bellevue Medical Center and in private practice. It was our purpose to devise a technic which would meet every contingency and leave the least scarring, and also

8. Caylor, H. D.: Epitheliomas in Sebaceous Cysts, Ann. Surg. **82**:164 (July) 1925.

9. Bishop, E. L.: Epidermoid Carcinoma in Sebaceous Cysts, Ann. Surg. **93**:109 (Jan.) 1931.

Fig. 2.—The crust has fallen off, and a minimal dimpling remains.

Fig. 3.—Photomicrograph, low power, of a sebaceous cyst which was excised several weeks after electrosurgery. Groups of giant cells can be seen in the upper portion of the homogeneous mass.

one entailing the least amount of discomfort and consumption of time. Our technic was a modification of Danna's in that we used the monopolar desiccating current exclusively and for cysts in all locations and stages, including cysts which had already broken down, while Danna recommended the bipolar current for larger cysts and restricted himself entirely to treatment of intact cysts.

The surface of the lesion was cleansed thoroughly with an antiseptic solution, and this was allowed to dry completely. The needle of the active electrode pole was inserted into the softest part of the cyst, which was usually in the center. An attempt was always made to insert the needle through the natural orifice of the

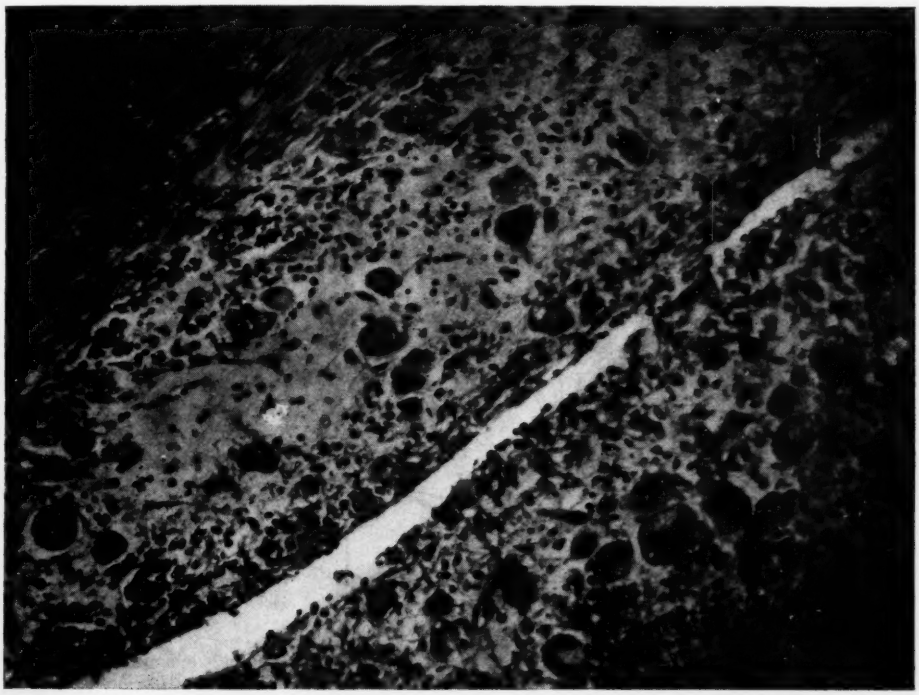

Fig. 4.—Photomicrograph, high power, of the sebaceous cyst illustrated in figure 3, showing the typical giant cell reaction resembling a foreign body granuloma.

cyst. The tip of the needle was made to penetrate only a few millimeters below the surface of the skin. No anesthetic was employed, as the pain from the insertion of the needle was negligible. The monopolar Ouidin current was used exclusively, with a low spark sufficient to obtain a blanching of the skin around the needle. The volume was controlled by means of the standard foot switch, and as soon as the patient evinced any pain the current was temporarily cut off. The blanching of the skin produced around the inserted needle was no greater than 3 mm. in diameter, and the current was stopped immediately before the needle was extracted. The stopping of the current before extraction of the needle is of utmost importance in order to avoid too large a slough and too great a necrotizing effect in the overlying

skin, the smallest scar possible thus being obtained. This method was used both on infected and on noninfected intact lesions. A crust replaced the blanched area on the skin, and this was permitted to remain in situ for about one week, when it was removed and the entire contents of the cyst with the sac either in pieces or intact were evacuated (fig. 1).

With wens of the scalp, the cyst contents became hard and in about ten days a small incision was made into the sloughed area of the skin and the entire cyst was delivered in toto. In other areas, the slough or scab would separate, drainage would occur and in about three to four weeks the entire cyst area would shrivel, leaving a minute depressed pit which was regarded as a favorable cosmetic result (fig. 2). In a number of our cases we gently lifted the scab after a week or ten days and were able to deliver the entire sac with its contents intact. In the larger cysts, we frequently made two punctures to cover the entire area. The regions of the skin in which cysts were treated successfully with this method included the

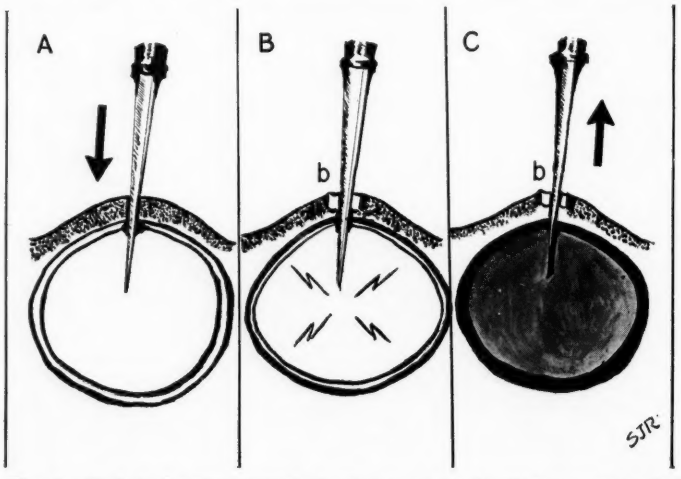

Fig. 5.—Technic for the removal of sebaceous cysts by electrosurgery. *A*, the needle is inserted into the cystic cavity. *B*, the current is turned on and the spark is maintained until an area of blanching (*b*) no greater than 3 mm. in diameter appears in the skin around the needle. *C*, the current is stopped after the blanching effect (*b*) has occurred, and the needle is extracted. The resulting crust from the area of blanching is permitted to remain in situ about one week; this is removed, and either the cyst is delivered in toto with the sac or some of the sebaceous material is first extruded and the sac follows.

cheeks, the forehead and the submental, inframandibular, retroauricular, scalp, back, chest, scrotal and labial regions.

Photomicrographs are here shown (figs. 3 and 4) of a cyst which was excised several weeks after our method of electrodesiccation had been used. A typical giant cell reaction, resembling a foreign body granuloma, was seen, and it is indeed possible that the action of the high frequency current produces such a foreign-body-like granuloma which eventuates later in fibrosis.

In 10 per cent of our cases one treatment was insufficient and in order to produce permanent eradication of the cyst it was necessary to repeat the procedure at a later date.

SUMMARY AND CONCLUSIONS

A simplified modification of the method of treating sebaceous cysts of the skin with the monopolar Ouidin diathermy current is described.

This method has the advantages that it is simple, the cosmetic results are excellent, there are few recurrences, the pain and discomfort to the patient are minimal and no anesthesia is necessary.

A minimum of apparatus is required, and the entire operation can be performed in a few minutes as an office procedure.

30 East Sixtieth Street, New York 22 (Dr. Robbins).

2167 Eighty-First Street Brooklyn 14 (Dr. Pensky).

INDUCED SENSITIZATION TO CERTIFIED DYE

Hypersensitivity Manifested on Sixth Exposure to Commercial Patch Testing Solutions

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PHILADELPHIA

SOLUTIONS of plant oleoresins prepared by ether extraction and dilution with 9 parts of acetone by volume have long been used for routine patch testing.[1] Such preparations are available commercially,[2] with green dye added to mark the site of the test on the skin. On the basis of a report of a single case of sensitivity to the green dye in 1941, a change to a certified dye was made by the manufacturer. The desired green color is obtained by the use of two dyes manufactured by National Aniline and Chemical Company, D. & C. Green No. 6 and F. D. & C. Yellow No. 3. The case reported herewith is apparently an instance of induced sensitivity to these certified dyes.[3]

REPORT OF A CASE

C. D., a white woman aged 49, was seen in July 1947 because of a recurrent, seasonal, eczematous eruption of eight years' duration, localized chiefly on exposed parts of the skin surface.

On Sept. 3, 1947, open patch tests to commercial acetone solutions of oleoresins from twenty-four weeds were applied. After forty-eight hours, the reactions to all tests were negative. On September 9 closed patch tests to commercial acetone solutions of oleoresins from twenty-five grasses were applied. Simultaneously, closed patch tests to three undiluted ether extracts were applied. After forty-eight hours the reactions to all tests were negative, with the following exceptions: porcupine grass, + 4; windmill grass, + 3; Bermuda grass, + 2; sprangletop, + 1; witch grass, + 1; orchard grass, ±, and undiluted ether extract of low ragweed, + 1. After seventy-two hours, the reaction to undiluted ether extract of low ragweed became decidedly infiamed and bullous. On September 23, three weeks after the initial series of tests, closed patch tests to commercial solutions of oleoresins from twenty-five shrubs were applied. After forty-eight hours, a ± reaction to arbor vitae was the only positive one. On October 7 closed patch tests to colored commercial extracts of twenty-five flowers and of Rhus toxicodendron were applied. The positive reactions after forty-eight hours were as follows: snapdragon, + 3; blue myrtle, + 2. After seventy-two hours, a violent bullous reaction to Rhus

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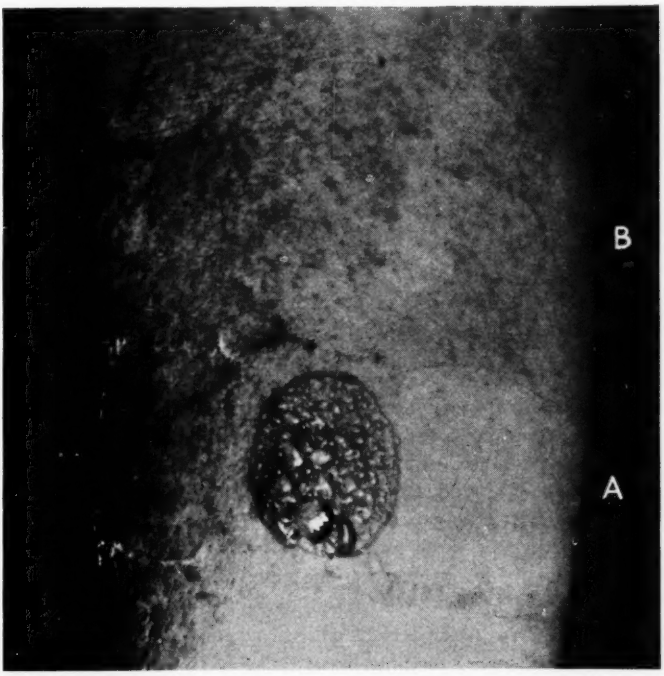
1. Shelmire, B.: Contact Dermatitis from Weeds: Patch Testing with Their Oleoresins, J. A. M. A. **113**:1085-1090 (Sept.) 1939.

2. Graham Laboratories, Dallas, Texas.

3. Graham, H.: Personal communication to the author, Jan. 31, 1948.

appeared, which became increasingly severe for several days. The results described so far were apparently valid as demonstrations of specific sensitivity to various plants and justified a diagnosis of eczematous contact dermatitis caused by several allergens.

On October 28 (ninety-five days after the initial series of tests) closed patch tests to commercial extracts of twenty-five trees were applied. After forty-eight hours, eighteen positive reactions were noted. The significance of these results is doubtful. Cross reactions could have been responsible for some of the positive reactions, or numerous strongly positive reactions may have increased the sensitivity



A, vesiculobullous reaction to patch test with colored acetone, forty-eight hours after application. *B,* negative reaction to plain acetone applied at the same time as the colored acetone.

of the skin so that it reacted to some substances to which it would not have reacted otherwise. The seven negative reactions indicated that sensitivity to the diluent had not yet developed.

On November 18 (one hundred and six days after the initial application of commercial patch testing solutions) extracts of twenty-four vegetables and a repeat test to chinaberry were applied. In forty-eight hours, all test sites showed a + 3 or + 4 reaction. The significance of these reactions as evidence of specific sensitivity to plant oleoresins was discounted. It was suspected that they were due to nonspecific sensitivity of the skin induced by the numerous strong reactions to the previous series of tests. Sensitization to the vehicle was considered possible.

Accordingly, no further testing was done until Jan. 6, 1948 (seven weeks later), when closed patch tests were done with twenty-five commercial solutions, some of which had previously produced weak reactions. At the same time a closed patch test to undiluted, uncolored ether extract of low ragweed was done. Reactions to all commercial solutions were bullous after forty-eight hours; the reaction to undiluted ether extract of low ragweed was negative. Specific sensitization to the vehicle, probably induced by repeated application, was then considered likely.

On January 8 closed patch tests to acetone, pure oil-soluble chlorophyll (Merck) and water-soluble chlorophyll (chloresium® ointment [Rystan]) were applied. In forty-eight hours, the reactions to all tests were negative.

Dr. Hugh Graham of the Graham Laboratories, the manufacturer of the patch testing solutions, was consulted. He gave information concerning the nature of the coloring agents contained in the commercial solutions and supplied a vial of colored acetone identical with that in which the plant extracts are dissolved.

On May 10 closed patch tests to plain acetone and to the colored acetone were applied. A vesiculobullous reaction to colored acetone appeared in forty-eight hours (figure, *A*). The patch test reaction to plain acetone remained completely negative (figure, *B*).

COMMENT

When all the reactions to commercial patch testing solutions are positive, specific sensitivity to the coloring matter may be suspected. Since these commercial extracts are widely used, the report of a single case of sensitization in seven years indicates that the sensitizing index of the dye is probably very low. However, sensitization may occur more frequently than is thought. Since the particular dye used to color the commercial patch testing materials is not ordinarily contacted by most persons, one would not expect such sensitization to be manifested on the initial series of tests because there would have been no eliciting exposure. If, in the course of time, however, a sensitized person is tested repeatedly, confusing reactions may occur, especially if the physician administering the eliciting exposure is not aware of the prior exposures. Since other methods are available for marking the patch test sites, the advisability of the addition of a dye to patch testing solutions is questionable. In any event, a control patch test to colored acetone should be employed.

Furthermore, where possible, it is desirable to apply all patch tests simultaneously or in as few applications performed in as short a time as possible. This practice limits the number of exposures and permits a minimal time for refractory and incubation periods, thus minimizing opportunities for possible induction of sensitivity to the dye or other components of the diluent.

SUMMARY AND CONCLUSIONS

A case of specific sensitization to a certified dye used to color patch testing solutions is reported. The induced sensitivity became evident on the sixth exposure to the dye.

The necessity for adding a dye to patch testing solutions may be questioned, but if solutions to which a dye has been added are used, control patch tests to the colored diluent should be employed.

When possible, all patch tests should be applied simultaneously or in as few applications and over as short a time as possible to avoid induced sensitization to components of the diluent.

NOTE.—Since this report was written, the paper of Baer and Leider [4] has appeared, in which the authors cited a number of instances of contact type sensitivity to various certified dyes, including F. D. & C Yellow No. 3. This report furnished strong evidence that the designation of a dye as "certified" must be accepted with considerable reservation with reference to the low sensitizing capacity of such a dye.

4. Baer, R. L., and Leider, M.: The Effects of Feeding Certified Food Azodyes in Paraphenylenediamine-Hypersensitive Subjects, J. Invest. Dermat. **13**:223, 1949.

TREATMENT OF DERMATITIS HERPETIFORMIS RESISTANT TO USUAL THERAPY

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AND
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THE CASE to be presented is of interest because of the following points: After failure of numerous forms of therapy a good response to sulfapyridine was followed by the development of intolerance and fastness to this medication. Treatment with potassium arsenite (Fowler's) solution was completely ineffective, resulting in unusually rapid development of palmar keratoses. The administration of aureomycin, penicillin and chloramphenicol (chloromycetin®) was completely ineffective. Terfonyl® (a combination of sulfadiazine, sulfamerazine and sulfamethazine in equal amounts) therapy was followed by immediate clearance of the lesions.

REPORT OF A CASE

S. G., a 34 year old shipping clerk, was admitted to the hospital in October 1949 because of recurrent dermatitis. The disease had been intermittently present for a period of four years, a diagnosis of dermatitis herpetiformis having been made in 1947, at which time a biopsy of the skin revealed changes compatible with this disease. A patch test with potassium iodide was reported at that time as eliciting a positive reaction. The disease had been characterized over this period by repeated exacerbations, numerous medications having failed to control the process until sulfapyridine was utilized. With this medication excellent results were obtained, the disease remaining under perfect control until a week before the October 1949 admission. At that time the patient acquired a severe recurrence of the eruption associated with fever, joint pain and weakness. Continuation of the sulfapyridine therapy was entirely without benefit, producing nausea and vomiting.

On admission the patient appeared moderately ill; his temperature was 100.2 F., but the results of physical examination were otherwise entirely within normal limits except for the observations concerning the skin. Over the entire body, including the scalp, face, neck, chest, thighs and legs, were noted erythematous vesicles

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Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are the results of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

occurring in groups, some lesions being secondarily infected. The lesions were obviously pruritic and traumatized by scratching. Numerous areas of pigmentation, the residuals of previous lesions, were present.

Laboratory work contributed very little information. The white blood cell count was normal except for an eosinophil count up to 12 per cent. The urine was normal with no evidence of sulfonamide crystals; culture of the blood grew no organisms; a roentgenogram of the chest was normal, and cultures of the pustules revealed only Staphylococcus aureus.

The observations concerning the patient were interpreted as representing an exacerbation of dermatitis herpetiformis with a superimposed intolerance to sulfapyridine. Treatment consisted in the use of oral antihistaminic drugs, intravenous administration of calcium gluconate, oral administration of calcium lactate and topical applications. In a few days the temperature fell to normal, but the skin lesions persisted with intense itching. The administration of aureomycin orally in doses of 2,000 mg. daily was completely ineffectual. Intramuscular injection of aqueous penicillin failed to produce any beneficial results. Chloramphenicol therapy was equally ineffective. In spite of the reaction he had experienced from sulfapyridine, the patient's symptoms were so severe that it was decided to readminister that drug. Treatment was started with extremely small doses, which were gradually increased, but for the first time since the onset of his illness the patient failed to respond to this medication.

On Nov. 19, 1949, terfonyl® was administered in a dosage of 2 tablets four times daily. Two days later this was increased to 3 tablets four times daily. Within eight hours the patient began to notice a decrease in the itching with gradual clearing of the vesicles and pustules. By November 24 his skin was entirely cleared, and on November 29 he was discharged from the hospital, his only residual being pigmentation in the areas where the lesions had been present. On December 29 the patient visited the clinic and was free of lesions. He had been taking terfonyl® since his discharge from the hospital.

COMMENTS

This patient with proved dermatitis herpetiformis of four years' duration had failed to have a response of the condition to numerous types of medications, all of which had been given a fair trial. The use of potassium arsenite solution had completely failed to improve his condition and was followed by the development of palmar keratoses within a period of two months. Excellent response was obtained with sulfapyridine for a period of about four years, after which that therapy became ineffective, with development of intolerance to the drug. Penicillin, aureomycin and chloramphenicol therapy proved entirely ineffective. Terfonyl® therapy was characterized by immediate and spectacular results, complete clearing of the dermatitis occurring within a period of five days. Terfonyl® is a combination of sulfadiazine, sulfamerazine and sulfamethazine, each tablet of 0.5 Gm. containing 0.167 Gm. of each of the constituents. The simultaneous administration of these medicaments in combination is believed less capable of toxicity than is any one of the constituents when given alone in similar dosage. The results obtained in the case reported would indicate that this medication merits a trial

in the treatment of dermatitis herpetiformis. Although spontaneous remission must be considered a possibility in this case, the pronounced activity of the lesions at the time the terfonyl® was first given leads us to suspect that that drug was effective.

SUMMARY

A case of dermatitis herpetiformis is reported which, after initial excellent response to sulfapyridine, later failed to be affected by this medication. The use of terfonyl® was followed by excellent results. It appears that terfonyl® merits a trial in the treatment of dermatitis herpetiformis.

NOTE.—Since this paper was completed, another patient with proved dermatitis herpetiformis, intolerant to sulfapyridine, received terfonyl® treatment with rapid healing of the lesions.

AMERICAN LEISHMANIASIS

Report of a Case with Unusual Mucocutaneous Lesions

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GUATEMALA, GUATEMALA

DESPITE the high incidence of American cutaneous leishmaniasis found in the northern part of Guatemala, the reasons for reporting this case are the following: (1) observation of the appearance of multiple skin lesions over different parts of the body (ear, arm, back and buttock) and the rectal mucosa and (2) the fact that in the available statistics on American leishmaniasis, 80 to 90 per cent of the reported cases had single or multiple skin lesions and 10 to 20 per cent of the cases presented the association of mucocutaneous lesions of the face and lesions of the nasopharyngeal mucosa but, so far as I know, there was not another report of a case with lesions of the rectum. Furthermore, the discovery of the mucous membrane lesions was significant, as treatment prevented the development of the serious sequelae which follow the appearance of such ulcers in the bowel.

The incubation period of American leishmaniasis ranges from twenty days to eight months. In this patient the initial lesion appeared four or five weeks after the patient commenced work in the endemic zone (gum plantation). The first lesion was present for three to four weeks before the diagnosis was made. The disease in this patient started as a single lesion over the pavilion of the right ear; this lesion became ulcerated, and new lesions appeared near the first one, covering the whole border of the ear. Later other lesions developed, one after the other, on different parts of the body. When the patient was seen on his first visit to the clinic, he had had the disease for one year and the interesting feature of his clinical picture was the multiple skin lesions in different stages of evolution. They had progressed to the point where the ear lesions were practically healed and showed deforming atrophic scars and the lesions of the buttocks were active ulcers with a granulomatous base and abundant yellowish thick secretion, while the lesions of the back, thigh and left arm were young, active lesions in the early stage of developing.

From the Skin and Syphilis Department of the Hospital General de Guatemala.

The microscopic study was obtained through the courtesy of Dr. Romeo de Leon, Jefe del Departamento de Investigaciones Científicas, Universidad de San Carlos de Guatemala.

The clinical picture suggested that the patient had spread the disease to the other parts of his body by mechanical induction (autoinoculation) or that he had been exposed to multiple mosquito bites at different periods (reinoculation). I am inclined to believe that this multiple infection followed reinoculation rather than autoinoculation. The patient had remained practically the whole year in or near the endemic zone.

REPORT OF CASE

On March 23, 1949, T. L., a 27 year old white single man, came to the skin and syphilis department of the Hospital General de Guatemala. He came from Flores (Petén), a small city located in the northern part of the country, where he worked as a chicle collector. His chief complaint was ulcers of the skin.

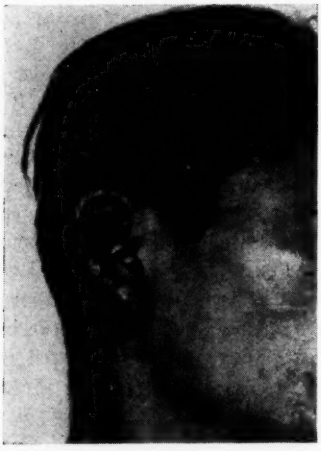

Fig. 1.—The lesions of the border of the right ear.

History of the Present Illness.—About a year before, three to four weeks after he had started to work as a chicle collector, he had noticed the appearance of a small cutaneous lesion over the upper border of the right ear. Later, similar lesions appeared over the rest of the ear border, which became practically covered with lesions. After the third week of his illness, the diagnosis of "chicle workers' disease" was made and the patient received a red ointment for local treatment. After four months of rest, the ear lesions became better and, although they were not healed, the patient returned to his former work in the gum plantation. New skin lesions, similar to the previous ones, appeared eight weeks after he returned to work and were located first over the left arm and then in the middle of the left buttock. Two months before his admission, new single lesions appeared one after the other over the lower part of the back, the right buttock and the posterior part of the right thigh.

During the past six months, the lesion of the buttock had enlarged in size and changed its appearance from that of a small pimple to that of a wide, deep ulcer. About this time the patient noticed some nodules in the left groin which caused

pain and discomfort on walking. This development was followed by that of bleeding and sharp pains when he had a bowel movement. During the preceding month, this pain had become intolerable. The patient complained of general malaise and weakness, associated with occasional chills, but no fever was present.

At the time of examination the patient had papular flat lesions over the border of the right ear, ranging from 0.5 cm. to 2 cm. in diameter, which extended from the upper part of the ear to the helix. Their color varied from white-yellow to red-violet. Only the lesions of the helix showed whitish nonadherent scales. The surface of the others was clean and lusterless. Their consistency was hard, like cardboard, slightly painful and practically without inflammatory reaction of the surrounding tissues. Among them, there were two atrophic yellowish scars. The pavilion was enlarged. There was no enlargement of the regional lypmh nodes. Involving the left buttock was a dark violet lesion, 32 cm. in length by 26 cm. in width, which invaded the intergluteal fissure, from the sacrum to the

Fig. 2.—Clinical photograph of the inner aspect of the left buttock, showing the ulcerated area and the papular lesions of the lumbar region, right buttock and thigh.

perineum (fig. 2). This lesion was hard and deeply infiltrated (cellulitis) with well demarcated borders. The surface of the ulcer was verrucous, with few papules located over the outer part of the buttock. Two smaller ulcers were found on the inner part of the buttock. The skin of the perianal region and scrotum was of a red-violet color. The scrotum was enlarged and deformed by a hard, painless edema of a cardboard consistency (cellulitis). The edema involved the shaft of the penis. The testes did not reveal any abnormal change (fig. 3). Although the limb movements were painful, no limitation was present. The inguinal region contained several indurated and painful lymph nodes, but no inflammatory reaction along the lymphatic channels was noted. On the outer surface of the left arm, on the midline of the lumbar region, on the outer part of the right buttock and on the posterior surface of the right thigh were single papular lesions of conic form with a slightly indurated reddish base and a thick yellowish crust of rupioid type. After this crust was removed there remained a granulomatous ulceration with sharp borders and thick purulent secretion.

Mucous Membranes.—Only the rectal mucosa was involved. The rectal sphincter tone was normal. Rectal examination showed an ovoid ulceration 2 cm. in length which spread upward from the rectal sphincter. It had a granulomatous, irregular floor and sharp, free borders. The surrounding tissues were edematous with shiny surface, slightly indurated and protruded into the rectal lumen. The ulcer bled profusely and was very tender. No other lesions were found in the neighboring areas of the rectum.

On general examination no abnormalities were found in the other organs.

Laboratory Examinations and Cutaneous Tests.—Microscopic Examination: Several smears were obtained from the exudate of the open ulcers (buttock), by

Fig. 3.—Clinical photograph showing the involvement of the scrotum and shaft of the penis.

scraping of the base and border of the ulcer. Also, smears were collected from the base of the nonulcerated lesions of the back, right buttock and thigh (crush smears). In practically all smears studied the Leishman-Donovan bodies were identified. There were abundant free or encapsulated bodies, associated with polymorphonuclear lymphocytes and red cells.

The Montenegro intradermic test was performed on April 3, 1949. The reaction was strongly positive (papulovesicular) and remained positive after the fifteenth day.

The reactions in serologic blood tests (Kahn and cardiolipin) were negative. The blood count showed 3,660,000 red cells with 60 per cent hemoglobin and 9,250 white cells with 6 per cent eosinophils, 17 per cent lymphocytes and 77 per cent neutrophils with 74 per cent with segmented nuclei and 3 per cent stab

forms. The results of examination of the urine were normal. Examination of the stools was negative for parasites (ova) and positive for red blood cells.

Pathologic Changes: The superficial and deep layers of the corium were occupied by an intense chronic inflammatory reaction in which lymphocytes, large macrophages and plasma cells were present. A few neutrophils and eosinophils were also seen throughout the tissue. Scattered among the intervening spaces and within macrophages were encapsulated oval parasites with small basophilic nuclei and the typical parabasal Leishman bodies.

The roentgenologic examination of the sigmoid flexure and descending colon (barium enema) did not show any abnormality.

Treatment and Evolution.—During the first weeks the patient was kept in bed and received a high protein diet free of residues together with large oral doses of ascorbic acid and the B complex. Also he was administered two blood transfusions in the amount of 250 cc. each.

Stibophen (Repodral®, Winthrop), a trivalent antimony compound in a 6.3 per cent aqueous solution, was used for specific treatment. Each cubic centimeter of this solution contains 8.5 mg. of trivalent antimony. Treatment started with a first dose of 1.5 cc. administered by the intramuscular route; four days later one more injection of 3.5 cc. was administered, and then doses of 5 cc. were given every six to seven days. At the time of writing, one hundred and ten days after the patient was first hospitalized, he had received 80 cc. of this solution without any toxic reaction. Wet compresses of potassium permanganate solution were applied twice a day over the open ulcers, and at night a sulfathiazole powder was spread over them.

The bleeding from the rectal ulceration disappeared completely three weeks after treatment started, and the lesion healed. The same evolution occurred in the cutaneous lesions with disappearance of secondary infection and purulent secretion. The patient was allowed to get out for a few hours as his general condition improved. Although the skin lesions were not completely cured, the administration of the antimony compound was stopped after the patient had received 80 cc. At the time of writing the patient remained under observation at the Outpatient Skin Department.

COMMENT

From the available literature on American leishmaniasis I have not found any other report describing invasion of the rectal mucosa, scrotum and penis. Stewart and Pilcher [1] described a similar case with lesions of the buttock and nasal mucosa but without invasion of the perineum and rectal tract. Among the reports of cases with mucocutaneous lesions are the following types: the nasal polyp form of leishmaniasis first described by Mangabeira Albernaz [2]; (G. Costa reported that only 15 cases of this type have been recorded in Brazil [3]); the cheilitis,

1. Stewart, C. D., and Pilcher, J. F.: American Leishmaniasis: Report of an Authochtonous Case, Arch. Dermat. & Syph. **51**:124-128 (Feb.) 1945.

2. Mangabeira Albernaz, P.: Contribution to the Pathogenesis of the Polypi of Leishmaniasis, Arch. internat. de laryng. **32**:139, 1926.

3. (*a*) Costa, O. G.: American (Mucocutaneous) Leishmaniasis: Observations, Arch. Dermat. & Syph. **49**:194 (March) 1944. (*b*) American Leishmaniasis of Frambesial Type, ibid. **50**:394-395 (Dec.) 1944.

paronychia leishmaniotica and frambesial type also reported by G. Costa,[3b] and the sort of cases reported by Greenway, from Argentina, who cited 1 case with cutaneous lesions located over the genitalia and another case with involvement of the larynx, trachea and bronchial mucosa.[4] Unfortunately, no further detail was given.

SUMMARY

One new case of American mucocutaneous leishmaniasis in a white laborer, native of the Republic of Guatemala, is reported. The skin lesions, numbering twelve in all, were of one year's duration. The single rectal ulcer was of six weeks' duration. There were lesions also noted on the right ear, outer surface of the left arm, lumbar region, left buttock, perineum, scrotum, penis and posterior aspect of the right thigh. The Leishman bodies were found in abundance in the microscopic smears and biopsy specimens. The reaction to the intradermic test (Montenegro) was strongly positive. Except for anemia, loss of weight and general weakness, no other abnormalities or disease were found on the general examination.

At the time of writing, one hundred and ten days after the treatment was started, the skin and mucous ulcerations were practically cured. The general condition had improved spectacularly.

8a. Avenida Sur, no. 74.

4. Greenway, D. F.: Zooparasitosis Humana, ed. 6, Buenos Aires, Argentina, Editorial Rioplatense, 1945, pp. 649-652.

LARGE SPORES (MACROCONIDIA, FUSEAUX) OF MICROSPORUM AUDOUINI IN VIVO

Report of a Case

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AND
I. EIRINBERG, M.D.
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APPEL and Ansell [1] reported in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY of February 1949 that they found large spores of Microsporum canis in their microscopic examination of the hairs of 2 patients with tinea capitis.

We should like to report our observations of macroconidia in the microscopic examination of hairs of a patient with tinea capitis caused by Microsporum audouini. To our knowledge, this is the first report of such observations. Evidently this phenomenon must be rare, since in dermatologic practice potassium hydroxide preparations of hairs of patients afflicted with fungous infections of the scalp are frequently and quite often routinely examined under the microscope. Yet, when present, these large spores are so conspicuous that it would be difficult for the trained observer to miss them.

We failed, however, to find in the available literature [2] any reference to the possibility of the production of macroconidia during the parasitic

From the Department of Dermatology and Syphilology, Northwestern University Medical School, Dr. Edward A. Oliver, Chairman.

1. Appel, B., and Ansell, H. B.: Large Spores (Macroconidia, Fuseaux) of Microsporum canis in Vivo: Report of 2 Cases, Arch. Dermat. & Syph. **59**:168-174 (Feb.) 1949.

2. Henrici, A. T.: Henrici's Molds, Yeasts, and Actinomycetes: A Handbook for Students of Bacteriology, ed. 2, New York, John Wiley & Sons, Inc., 1947. Dubos, R. J.: Bacterial and Mycotic Infections of Man, Philadelphia, J. B. Lippincott Company, 1948. Sequeira, J. H.; Ingram, J. T., and Brain, R. T.: Diseases of the Skin, ed. 5, New York, The Macmillan Company, 1947. Becker, S. W., and Obermayer, M. E.: Modern Dermatology and Syphilology, ed. 2, Philadelphia, J. B. Lippincott Company, 1947. Sutton, R. L., and Sutton, R. L., Jr.: An Introduction to Dermatology, ed. 4, St. Louis, C. V. Mosby Company, 1941. MacKenna, R. M. B.: Modern Trends in Dermatology, New York, Paul B. Hoeber, Inc., 1948. Ormsby, O. S., and Montgomery, H.: Diseases of the Skin, ed. 7, Philadelphia, Lea & Febiger, 1948. Lewis, G. M., and Hopper, M. E.: An Introduction to

(Footnote continued on next page)

phase of infection with ringworm fungi. On the other hand, Appel and Ansell [1] quoted Davidson and Gregory [3] as follows: "So long as hairs infected with Microsporum audouini, Trichophyton gypseum, and other ringworm fungi remain attached to the body, the fungi attacking them consist only of hyphae and small round spores."

In view of the cultural characteristics, the observations of fuseaux of M. audouini in vivo is strikingly interesting.

REPORT OF A CASE

T. E., a Negro child 5 years old, was first examined in the Department of Dermatology at Northwestern University Medical School on June 10, 1949 (fig. 1). The mother had noted patches of baldness in the child's scalp for a period of about two weeks. Clinical examinations of the scalp revealed an irregular patch of alopecia about 5 cm. in diameter in the occipital region. Within the patch scaling and mild folliculitis were evident. Most of the hairs in that area were broken off 2 or 3 mm. from the scalp. A large posterior cervical node was palpable on the right side. Under illumination with Wood's filter a moderate degree of fluorescence was observed limited to the hairs within the patch of alopecia.

Several of the fluorescent hairs were epilated and planted on Sabouraud's medium while several others, immersed in a 20 per cent solution of potassium hydroxide, were examined immediately under the microscope. There an unusual picture was seen. In addition to numerous ectothrix small spores, many fuseaux, some resembling those of Microsporum and others resembling those of Trichophyton, were present (fig. 2). While some of the fuseaux appeared ill formed, many were perfectly formed with clearly recognizable septations and definite walls (fig. 3). Cultures on Sabouraud's medium were characteristic of M. audouini (fig. 4). No growth was observed on rice grains. Unfortunately, honey agar and yeast extract medium, which is used for the production of macroconidia of M. audouini, was unavailable for implantation.

After 5 per cent boric acid ointment had been applied for one week, fluorescent hairs were again epilated and, although a careful search for fuseaux was made, none could be found; only numerous small round spores were noted. On June 17, 1949, treatment with 5 per cent salicylanilide in carbowax® was begun and the usual instructions for scalp care were given to the mother.

At the time of writing, the patient had failed to keep her subsequent appointments.

Medical Mycology, ed. 3, Chicago, The Year Book Publishers, Inc., 1948. Langeron, M.: Précis de mycologie, Paris, Masson & Cie, 1945. Tobias, N.: Essentials of Dermatology, ed. 2, Philadelphia, J. P. Lippincott Company, 1944. Conant, N. F., and others: Manual of Clinical Mycology, National Research Council, Division of Medical Sciences (Military Medical Manual), Philadelphia, W. B. Saunders Company, 1944. Pusey, W. A.: The Principles and Practice of Dermatology, ed. 4, New York, D. Appleton & Company, 1926. Andrews, G. C.: Diseases of the Skin, for Practitioners and Students, ed. 3, Philadelphia, W. B. Saunders Company, 1946. Stelwagon, H. W.: Diseases of the Skin, with the Assistance of H. K. Gaskill, ed. 9, Philadelphia, W. B. Saunders Company, 1921.

3. Davidson, A. M., and Gregory, P. H.: Development of Fuseaux, Aleuriospores and Spirals, Nature, London **131**:836, 1933.

Fig. 1.—Tinea capitis caused by Microsporum audouini.

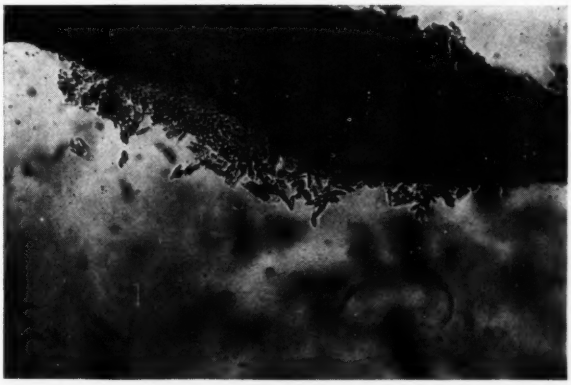

Fig. 2.—Small spores and fuseaux.

Fig. 3.—Fuseaux with septations, high power view.

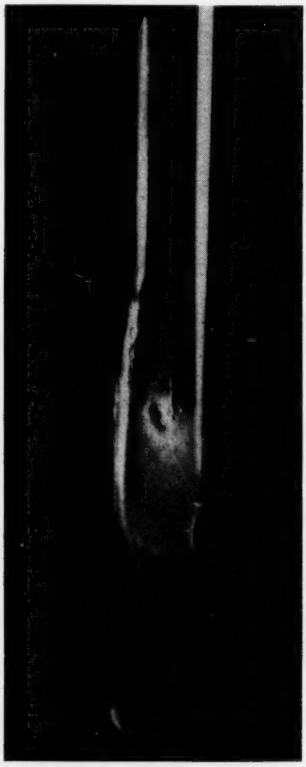

Fig. 4.—Culture of Microsporum audouini on Sabouraud's medium.

CONCLUSIONS

A case of tinea capitis in which the large spores (macroconidia, fuseaux) of M. audouini were produced in vivo in the hair of a 5 year old Negro child is presented.

In view of the cultural characteristics of the organism, observation of the macroconidia of M. audouini in vivo is particularly interesting.

Clinical Notes

BRITTLE NAILS: A CAUSE

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CHICAGO

Brittleness of the nails, or fragilitas ungium, is common, especially among middle-aged women. It is seen much more frequently in winter, probably because of the drier air. Breaking off of nails may be so mild that only little of the edge chips away, leaving it a little roughened or serrated. In severe instances large enough sections may come away so as to be painful (the portion being broken off to the "quick") and open the nail base and folds to infection. The entire thickness of the nail may cleave cleanly or only sections or layers remove themselves as flakes.

The cause of brittle nails may be some definite entity, masked or obvious, such as syphilis. Cutaneous diseases, such as atopic eczema of the fingers, psoriasis, lichen planus, contact dermatitis or dermatitis venenata, may account for this nuisance. Diseases of the nervous system, as well as undue physical and chemical injury to the nails, as is seen in persons in certain occupations, such as laboratory workers, glass workers and housekeepers, may be responsible. In women the use of nail lacquers and their removal by oil solvents may dry these appendages and reduce their flexibility. Trimming these parts into unnatural shapes or allowing them to extend to excessive lengths may be contributory.

According to Sutton,[1] the character of nails may be influenced by being malformed as a congenital defect or by neoplasia, such as melanomas, or subungual exostoses. Trauma of various sorts, physical, mechanical and chemical, may change the growth of a nail. Altered metabolism, such as that arising from vitamin deficiencies or hormonal imbalances, may show itself in the appearance of the nails. Inflammation of the tissues about the nails, such as that due to syphilis, may influence nails. The appearance of nails may be changed by infections in them or of adjacent soft tissues. Finally, neurotic habits, such as biting or pulling the nails, may distort them.

The cases of 4 patients who complained of brittle nails together with observations on the ungual material are here detailed.

REPORT OF CASES

CASE 1.—S. M., a white woman 44 years old, had had trouble with nails of the index and middle fingers on both sides breaking sufficiently high at times to be painful. There was nothing in her occupation or hobbies that could account for the complaint. She said that her health otherwise was good. Examination of the offending nails did not disclose any differences from the others. The surfaces were smooth, and there was normal color and translucence. On careful observation of the silhouette view, it was seen that the summit of the transverse curve was slightly

From the Department of Dermatology, University of Illinois College of Medicine, and the Cook County Hospital.

1. Sutton, R. I., and Sutton, R. L. Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939, p. 1420.

flattened. When equal pressure with a blunt instrument was applied over parts of the nail it was found that the midsection of the nail base was tenderer than the lateral zones. The patient was instructed to wear protective dressings over the nails for two weeks. When she returned the nails were long enough to trim. The portion removed was examined histologically and found to be much thicker at the sides and thinnest at the midline.

CASE 2.—H. J., a white woman 55 years old, complained that all her nails broke off easily. She had pernicious anemia, but this had been under control for the last two and one-half years by treatment with liver extract. Examination of the nails showed only three which were shortened and uneven. She admitted that these were the only ones giving her any trouble. The transverse curvature of

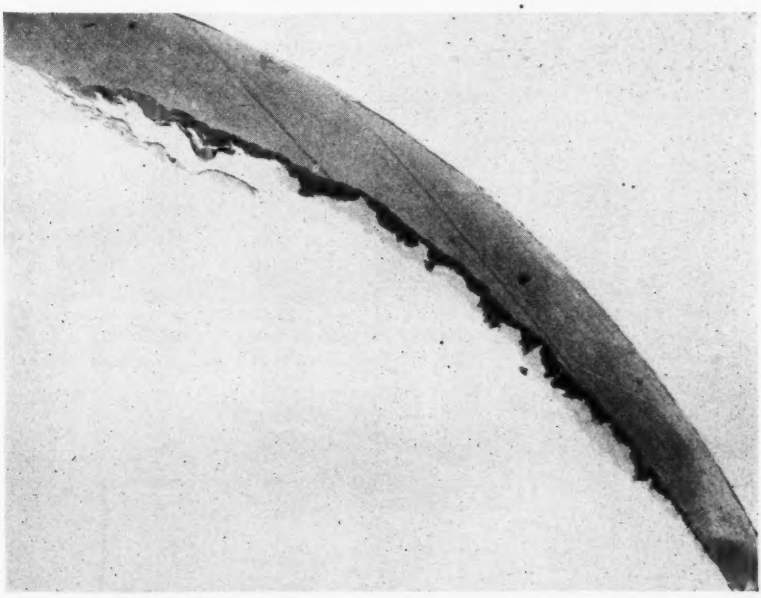

Fig. 1 (case 1).—Tapering of nail from the side to midsection.

these nails was slightly flattened over the middle third of the nail, and equal pressure evoked more tenderness over this part than at the sides. The nails were protected and a section of each of the free ends removed. On histologic examination the structure was observed to be normal in appearance except that the ends of the section were much thicker than the middle. There was a gradual tapering toward the center.

CASE 3.—T. N., a Negro woman 37 years old, complained that both thumb nails broke off readily. She did housework, but denied that this entailed greater use of soaps and cleansers than is usual for housekeepers. She used no nail lacquer. The trimmed full ends of the thumb nails were seen under the microscope to be thicker at the ends and tapered toward the center. The other nails were seen to be regular and about uniform in width.

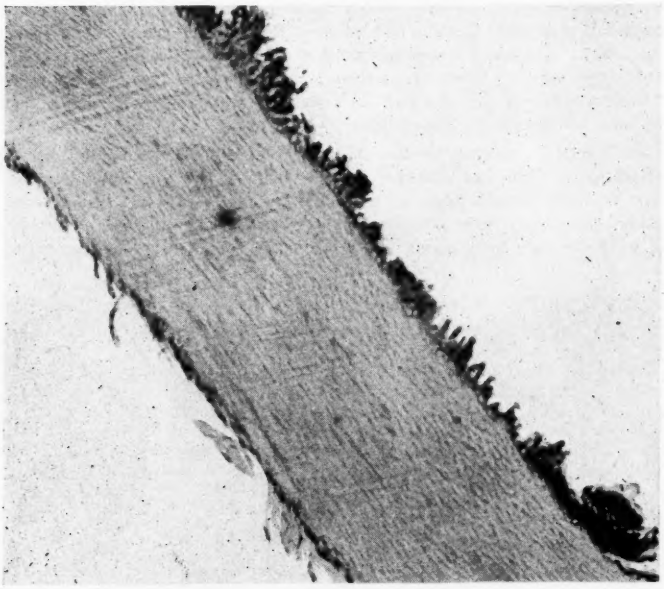

Fig. 2 (case 2).—Side of nail.

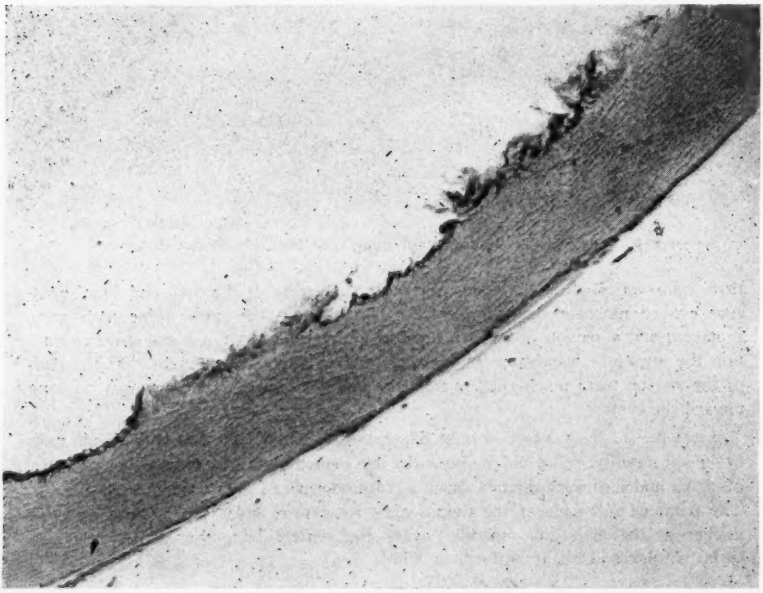

Fig. 3 (case 2).—Midsection of nail (same magnification as in figure 2).

CASE 4.—A. E., a white chemist 54 years old, said that all his finger nails were brittle. Examination of them showed them to be normal in all respects except for their shortness and chipping of the edges. The toe nails were of the same appearance. Fungi were not found by direct view or on culture of nail fragments. It was difficult to obtain satisfactory trimmings from the nails for histologic study. A narrow strip from the free edge of the left ring finger was obtained, and this showed thicker ends and a tapered center.

DISCUSSION

In all these subjects the thickness of the nail was uneven, with the middle part thinner than the sides. The structure of the nails was otherwise normal. The nails that were not brittle on the same patients did not show this appearance.

This anomaly of the nail may be compared in a manner to that of the hairs in the disease called monilethrix. In the latter, the hair has alternating nodes and attenuations. Such hairs break easily at the narrow segments. Consequently the subjects show short, stubby hair growth. In the same way nails uneven in thickness may break readily. Perhaps pressures on the free edge of the nail set up unequal stresses.

There is another nail disorder different from the one herein described, called "reedy nails" or onychorrhexis, in which the nail tends to break longitudinally or in layers. In this entity the nail surface is not smooth and even but tends to be ridged.

SUMMARY

In 4 subjects who complained of brittle nails, histologic examination showed that the sides were much thicker than the middle sections. The unaffected nails in the same persons were of more uniform thickness. The nails broke at the thinner midportion, and the break extended in either or both directions.

BENIGN COURSE OF DERMATOPHYTOSIS DUE TO COMBINED INFECTION WITH EPIDERMOPHYTON FLOCCOSUM AND TRICHOPHYTON RUBRUM

Report of a Case

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AND
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The following recently observed case is reported because of the relative rarity of combined fungous infections.

REPORT OF CASE

A white boy aged 15, when first seen by us, on June 1, 1948, presented an eruption that involved the hands and the right foot. He had noticed this in April 1948 and had not been free from it since. It had begun with small vesicles on the inner surface of the right foot. Shortly before the first visit small vesicles had developed on the palms and interdigital spaces of the hands. On examination

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From the Skin and Cancer Unit, Department of Dermatology and Syphilology, Dr. Marion B. Sulzberger, director, Post-Graduate Medical School of New York University–Bellevue Medical Center.

the patient was seen to present a large erythematous patch of papules, pustules and vesicles on the dorsum and sole of the right foot, and numerous minute vesicles on both palms, especially that of the right hand. Microscopic examination of scrapings from the foot and hands revealed mycelia. The culture of material from the hands showed only saprophytic growth. Separation of the two pathogenic fungi obtained from the patient was successful, and pure cultures were isolated after two transplantations.

The patient received treatment with boric acid ointment, and the condition of the hand cleared up within a few weeks. The foot became practically normal after two months of treatment.

COMMENT

This case resembles the one reported by Muskatblit in November 1946 [1] and is interesting as a mycologic curiosity. Whereas Muskatblit's case showed concomitant infection by Trichophyton rubrum (purpureum) and Trichophyton mentagrophytes (interdigitale), T. rubrum (purpureum) and Epidermophyton floccosum (inguinale) were found in our case. It cannot be ascertained whether in these 2 cases the infection took place at the same time with both fungi. In Muskatblit's case the clinical features were not typical of T. rubrum infection. In the present case also the characteristic observations for T. rubrum were lacking and in particular the usual great chronicity and resistance to therapy were absent. Muskatblit stated the supposition that T. mentagrophytes might have acted as antagonist to the growth of T. rubrum. If Muskatblit's hypothesis is correct there is the possibility that this modifying action may be useful therapeutically and that deliberate inoculation with certain other fungi may speed up the cure of T. rubrum infections.

A review of cases of combined fungous infections in various locations was recently made by Loewenthal.[2]

1. Muskatblit, E.: Dermatophytosis Due to Combined Infection with Trichophyton Interdigitale and Trichophyton Purpureum: Report of a Case, Arch. Dermat. & Syph. **54**:558 (Nov.) 1946.

2. Loewenthal, K.: Tinea Capitis Due to Combined Infection with Microsporum Audouini and Microsporum Lanosum: Report of a Case, Arch. Dermat. & Syph. **58**:27 (July) 1948.

POSTRADIATION COMEDOS

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BROOKLYN

In a recent article, Bluefarb [1] reported the occurrence of comedos following roentgen irradiation of epitheliomas. These comedos involved the previously normal skin in and slightly beyond the irradiated patch. Ronchese [2] later reported his observations on the same subject. I should like to add my own.

Bluefarb considered this occurrence a rare one, having observed it only once in several hundred cases of epithelioma treated by roentgen radiations. Ronchese considered it not at all unusual and thought that it should occur in practically every

1. Bluefarb, S. M.: Comedos Following Roentgen Ray Therapy, Arch. Dermat. & Syph. **56**:537 (Oct.) 1947.

2. Ronchese, F.: Cicatricial Comedos and Milia, Arch. Dermat. & Syph. **61**:498 (March) 1950.

case in which the pilosebaceous apparatus was normally developed. I concur with Ronchese on its incidence but not on the mechanism of its formation. He thought the comedo due to a cicatrizing stricture of the gland's outlet with a resulting blockade of sebum. Bluefarb considered it due to a compensatory hypertrophy of the pilosebaceous apparatus. I believe the process to be one of simple stagnation, with consequent desiccation, of the contents of a gland that has undergone permanent atrophy and the duct and orifice of which have become dilated because of the loss of the epithelial and connective tissue framework. It can be demonstrated that mechanical removal of the dried plug will spell the end of the comedo, which cannot recur because of the permanent arrest of function of the gland.

These postradiation comedos are more noticeable where the sebaceous orifices are large and may escape detection where the openings are small.

I have noticed this occurrence repeatedly but have not reported it because I did not consider it unusual.

The appearance of the lesions slightly beyond the exposed area is easily explained by the principle of scattered radiation.

711 Bushwick Avenue (21).

ACNE VULGARIS: A COMPARISON OF LOCAL REMEDIES

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In the management of acne there have been used many chemical and physical agents, of which sulfur preparations have generally been accorded a prominent position in the local therapy of this disease. While white lotion is best known from a historical viewpoint and because of its wide usage, other sulfur preparations, allegedly superior, have been frequently introduced in recent years. The object of our study has been to compare the clinical effects of white lotion, sulpho-lac,® intraderm® sulfur solution, acnomel® and polythionate lotion under identical and uniformly controlled hospital conditions.

Comparable trial therapy was conducted during a six week period in July and August 1948 after the severer cases of acne vulgaris had been selected from 2,500 patients at the Pennhurst State School. A group of 50 patients was set up for our study of the reactions of the five well known local remedies. At the school patients live in small groups in dormitories under the supervision of an attendant. In our work an attendant was assigned to 5 patients, each of whom was treated with a different preparation. Care was taken to include groups of patients who dwelt largely indoors as well as groups of those who had outside activities. No attempt was made to treat the patients with any but local therapy: there was no diet control, no surgical measures for acne, no oral or parenteral medication and no irradiation.

From the Department of Dermatology and Syphilology, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

We have been unable to find with certainty at what time and by whom white lotion was first introduced into medicine.[1] The white lotion used in our study contained zinc sulfate, 3.4 per cent, and potassium sulfide, 3.4 per cent, in distilled water. The principal active ingredients of sulpho-lac® are colloidal sulfur, sulfurated lime and zinc sulfate. Intraderm® sulfur solution contains 0.75 per cent sulfur in the form of polysulfides and sulfides in a mildly alkaline base which effects skin penetration [2] of the pilosebaceous apparatus.[3] The more active contents of acnomel® are resorcinol, 2 per cent, and sulfur, 8 per cent. Polythionate lotion, the fifth preparation in our study, is a stable solution of polythionates of sodium containing sulfur, 1.5 per cent, with zinc oxide, 3 per cent, suspended in distilled water. Chemically, the polythionates are capable of changing from one form to another.[4] Goodman and Gilman [5] offered the suggestion of the possible effect of sulfur on the skin being due to polythionic acids.

Daily for six weeks each medication was applied by the attendants to the lesions of the patients. During this time the patients were checked by us in order for us to note changes in the lesions and to look for skin reactions. Response to therapy was noted by counting the number of papules and pustules before, during and after treatment for six weeks. Improvement was considered to have occurred when the number of papules and pustules was decreased by 50 per cent.

Results of Treatment with Five Local Remedies for Acne Vulgaris

	Number of Patients	Improvement			No Improvement		
		Male	Female	Per Cent	Male	Female	Per Cent
White lotion	8	2	5	87.5	1	0	12.5
"Sulpho-lac"	10	4	4	80.0	1	1	20.0
"Intraderm" sulfur	8	3	4	87.5	0	1	12.5
"Acnomel"	10	3	4	70.0	2	1	30.0
Polythionate lotion	10	3	5	80.0	1	1	20.0
Total	46	15	22		5	4	

At the beginning of the study 10 patients were started on treatment with each preparation, but 4 failed to finish treatment because they left the institution. A total of 46 cases, therefore, are reported; there were 20 male and 26 female patients, ranging in age from 14 to 29 years.

In 46 patients treated with the aforementioned five preparations, there was a general tendency toward improvement, although slightly less with acnomel® than with the other remedies. No one preparation proved to be specifically more effective, more beneficial or finer than any other preparation (table).

1. Goodman, H.: Lotio Alba: Historical Query, Arch. Dermat. & Syph. **32**:801 (Nov.) 1935.

2. MacKee, G. M.; Wachtel, J.; Karp, F. L., and Herrmann, F.: The Evaluation of "Intraderm Sulfur" for Acne Vulgaris, J. Invest. Dermat. **6**:309 (Oct.) 1945.

3. MacKee, G. M.; Sulzberger, M. B.; Herrmann, F., and Baer, R. L.: Histologic Studies on Percutaneous Penetration, with Special Reference to the Effect of Vehicles, J. Invest. Dermat. **6**:43 (Feb.) 1945.

4. Debus, H.: Chemical Investigation of Wackenroder's Solution and Explanation of the Formation of Its Constituents, J. Chem. Soc., London **53**:278, 1888.

5. Goodman, L. S., and Gilman, A.: The Pharmacological Basis of Therapeutics: A Textbook of Pharmacology, Toxicology and Therapeutics for Physicians and Medical Students, New York, The Macmillan Company, 1941, p. 1383.

REACTIONS

All the reactions occurred in female patients: Administration of sulpho-lac® produced moderate erythema and scaling in 1 patient; the use of intraderm® sulfur solution resulted in a mild erythema in 2 cases and moderate scaling and erythema in a third case; application of acnomel® created a mild scaling in 1 case, and treatment with polythionate lotion and white lotion brought about no unfavorable effects. None of the reactions was severe enough to cause discontinuance of treatment.

SUMMARY

An attempt was made to compare the effectiveness of preparations for acne by the use of these preparations without other means of therapy. A trial period of six weeks was used, this being considered a reasonable length of time for treatment.

Of five preparations used—namely white lotion, sulpho-lac,® intraderm® sulfur solution, acnomel® and polythionate lotion—for the treatment of acne vulgaris, no one proved to be far superior to any of the others.

EHLERS-DANLOS SYNDROME: REPORT OF A CASE

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LIEUTENANT (jg) FAGG B. NOWLAN (MC), U.S.N.R.*
AND
LIEUTENANT (jg) HAROLD PERRY (MC), U.S.N.R.*

We report this case of the Ehlers-Danlos syndrome because of the general interest such a case presents to the practitioner of medicine. This disease process is not a rarity, and yet few cases have been reported in which all components of the syndrome were present.

Early descriptions of the syndrome were made by Ehlers, by Cohn and by Danlos.[1] Since that time, many more cases have been reported, a larger proportion now coming from the American literature. In 1936 Ronchese [2] reviewed the literature, finding 27 previous cases and adding 3 of his own. Through this review it was learned that not all cases previously reported satisfied the criteria originally prescribed by Ehlers and Danlos, namely (1) dermatorrhexis (fragilitas cutis), (2) dermatochalasis (laxitas cutis) and (3) arthrochalasis (laxitas articularis). Speculation still exists concerning the etiology of this disease. The histopathologic picture varies according to the authors who report the cases, all authors reporting

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1. Ehlers, Cohn and Danlos, cited by Benjamin, B., and Weiner, H.: Syndrome of Cutaneous Fragility and Hyperelasticity and Articular Hyperlaxity, Am. J. Dis. Child. **65**:247-257 (Feb.) 1943.

2. Ronchese, F.: Dermatorrhexis, with Dermatochalasis and Arthrochalasis (the So-Called Ehlers-Danlos Syndrome), Am. J. Dis. Child. **51**:1403-1414 (June) 1936.

various changes throughout the layers of the skin, with the change most constantly noted being that of an increase in the amount of the elastic tissue present.[3]

The following is a report of the case of a patient seen by us who in our opinion demonstrates the triad necessary for the diagnosis of the Ehlers-Danlos syndrome.

REPORT OF CASE

The patient, R. L. C., an 18 year old white private first class in the United States Marine Corps, was first seen on the dermatology service in November 1947,

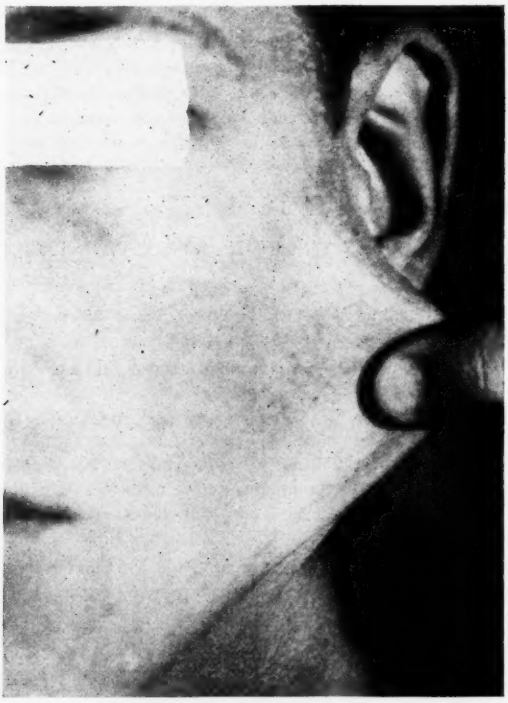

Fig. 1.—Dermatochalasis about the face and neck.

at which time he complained of "scars on my legs that turn purple." His history revealed that since early childhood he had been subject to formation of bluish

3. Ronchese.[2] Tobias, N.: Danlos Syndrome Associated with Congenital Lipomatosis, Arch. Dermat. & Syph. **30**:540-551 (Oct.) 1934. Pittinos, G. E.: Ehlers-Danlos Syndrome with a Disturbance of Creatinine Metabolism, J. Pediat. **19**:85-89 (July) 1941. Skeer, J., and Kaplan, A. A.: Ehlers-Danlos Syndrome, Arch. Dermat. & Syph. **42**:450-455 (Sept.) 1940. Ormsby, O., and Montgomery, H.: Diseases of the Skin, ed. 7, Philadelphia, Lea & Febiger, 1948, pp. 633-634. Smith, C. H.: Dermatorrhexis (Ehlers-Danlos Syndrome), J. Pediat. **14**:632-642 (May) 1939.

swellings over the knees, shins and elbows following the slightest trauma to these areas. The swellings would appear almost immediately, being bluish purple, tense, firm and painful. The lesions would persist as such for three to four days, regressing over the next few weeks with the subsequent development of wrinkled, atrophic, hyperpigmented scars. These scars were asymptomatic until they were subjected to further trauma. The patient had noted that the skin over the elbows and knees would stretch to a considerable degree and assume normal body contours on release of tension. He had never sought medical advice until a few weeks before his

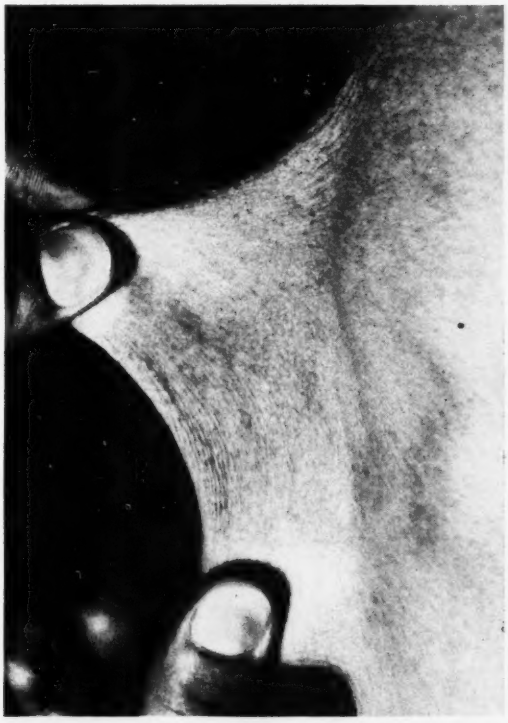

Fig. 2.—Elasticity of the skin was particularly noticeable over the elbows.

admission to this hospital. At that time his work was such that his legs were subject to frequent injuries and he was thus incapacitated for duty because of the large number of painful swellings which developed.

The past history revealed no unusual illnesses. Tonsillectomy in 1941 was performed with no complications. In December 1946 the patient received a severe laceration of the nose as a result of an automobile accident, and in March 1947, a laceration of the right foot from an ax wound. Both wounds were sutured and healed rapidly. No separation of the wound edges or abnormal scar formation resulted.

The family history revealed no similar disorders. The patient was the third of 3 children, the oldest having been stillborn and the other having died of pneumonia in infancy. The mother and father were both living and well.

The results of the general physical examination were normal, the only abnormal observations being those limited to the skin and joints. A thin, well healed, 12 cm.

Fig. 3.—Atrophic areas of scarring, sites of previous pseudotumors, were present over the lower parts of the legs. The lesion of the right knee showed particularly well the wrinkled, atrophic character of the scars.

linear scar, barely discernible, was seen over the bridge of the nose extending from the tip laterally toward the zygoma. Another well healed scar was found over the right metatarsal arch. The skin of the entire body was soft and of fine texture. It could be easily stretched, this feature being particularly noticeable over the face and neck and the elbows and knees (figs. 1 and 2). Over both elbows and much more prominently over the lower extremities from the knees to the ankles were

numerous ovoid to round hyperpigmented areas of scarring. On close inspection, the individual lesions were seen to be wrinkled, parchment thin and transparent, the underlying vascular structures being easily visible (fig. 3). The interphalangeal joints were hyperextensible under ordinary volition (fig. 4). None of the other joints of the body showed this characteristic.

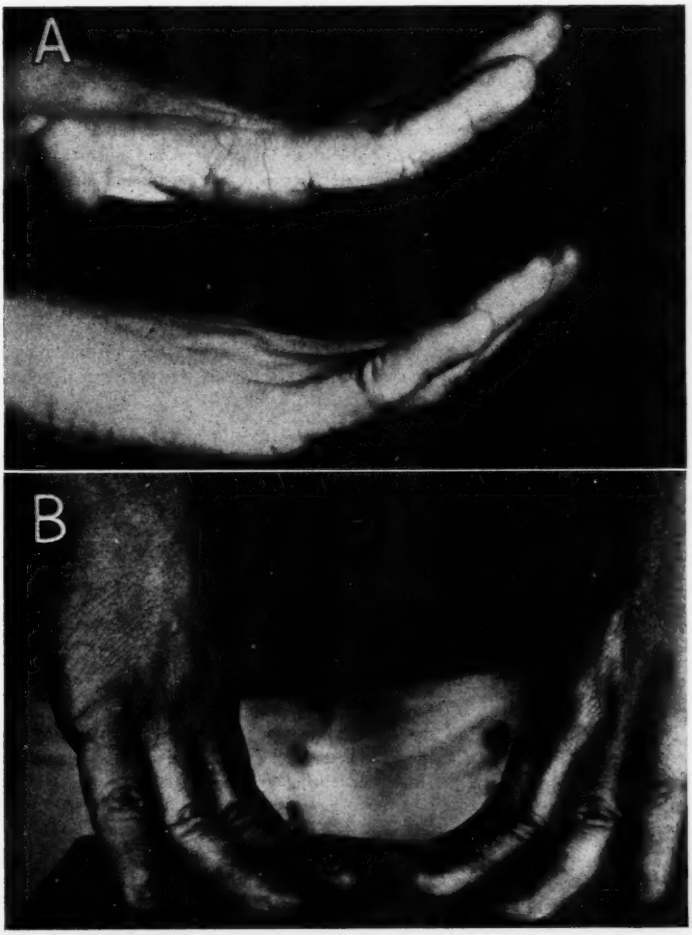

Fig. 4.—Arthrochalasis of the interphalangeal joints shown (*A*) under volition and (*B*) with pressure being applied to these joints.

Laboratory examinations consisting of determinations of bleeding time, clotting time, clot retraction time, amount of hemoglobin, erythrocyte count and leukocyte count and routine and microscopic examinations of the urine all gave results within

normal limits. The results of the Leede-Rumpel tourniquet test and the blood Kahn reaction were negative.

A biopsy specimen consisting of an entire area of hyperpigmentation and adjacent normal tissue was taken. Microscopic examination (by E. J. R.) revealed the epidermis at the ends of the long piece of tissue to be essentially normal. Beneath this, the cutis was made up of loosely arranged connective tissue bundles and contained an unusually large number of fibroblasts, small blood vessels and elastic tissue fibers. The sweat and sebaceous glands appeared normal in these areas.

In the central portion of the specimen, the epidermis was atrophic. The cutis there was made up of fine connective tissue bundles which tended to parallel the surface. Fibroblasts were abundant. There was a tremendous increase in the small blood vessels at all depths, and chromatophores, heavily laden with pigment granules, were abundant. Sweat glands in this area appeared normal, but no sebaceous glands were seen. Elastic tissue fibers were abundant but showed pronounced fragmentation and in some places where scarring was prominent were absent altogether.

While in the hospital this patient demonstrated the dermatorrhexis described by Ehlers. The trauma incident to repeated examinations of the scars produced the hemorrhagic pseudotumors previously mentioned. The site of the removal of tissue for biopsy healed poorly in that there was some separation of the wound edges on removal of the sutures on the sixth postoperative day. On healing, the scar produced duplicated the one removed for biopsy in size, color and characteristics.

SUMMARY

The criteria for the diagnosis of the Ehlers-Danlos syndrome are outlined, together with a case which satisfies these criteria. The histopathologic features of the case presented are reported.

ERYTHRODERMA AND ERYTHRODERMIA

A Note on Nomenclature

F. RONCHESE, M.D.
PROVIDENCE, R. I.

In a recent discussion on the use and meaning of the words *erythroderma* and *erythrodermia*[1] Leider concluded that "erythroderma is best reserved for simple description of mere persistent or chronic redness in the skin as a sign; erythrodermia is best employed to name pathologic conditions in which erythroderma is a major component."

This matter can be boiled down to the fact that the person who writes in English has not at his disposal or does not wish to use an English term but prefers to use, or misuse, the Latin and/or Greek. The French coined *érythrodermie,* the Germans, *Erythrodermien* or *Erythrodermiten* and the Italians, Spaniards and Portuguese, *eritrodermia,* which are no more Greek or Latin but, respectively, French, German and Italian, Spanish or Portuguese words. Why should not English-speaking writers, employ, for instance, *erythrodermy* and forget *erythrodermia* and *erythroderma?*

1. Leider, M.: Philological Notes on the Words Erythroderma, Erythrodermia and Erythema, J. Invest. Dermat. **11**:63, 1948.

The only difference between the two appears to be that *erythrodermia* is feminine and *erythroderma* neuter. Otherwise they are synonyms, both giving the same morphologic and clinical diagnostic concept. Once rid of one or both, perhaps, there will be less opportunity of seeing in print such classic flowers as erythroderma desquamat*iva*, erythema multiforme bull*osa*, keratoderma plantar*is*, xeroderma pigment*osa*, atrophoderma reticul*ata*, keratoderma punct*ata*, pyoderma gangren*osa*, lymphoderma pernici*osa*, ecthyma gangren*osa*, leukoderma syphilit*ica*, and syphiloderma bull*osa*, together with urticaria sol*are*, dermatitis sol*are*, eczema autolyt*ica*, impetigo contagios*um*, lentigo malign*um*, lichen simplex chron*ica*, cutis anserin*us* and hydroa [2] aestiv*ale*.

If the French coined *érythrodermie* and the Italians *eritrodermia*, there is no reason for not saying *solar erythrodermy, congenital ichthyosiform erythrodermy, scleroderm*y, *pyodermy, anetodermy, erythromely and erythromelalgy* instead of using words ending with -ia and -a. We say *biography, philosophy, fantasy* and *geography*, and not *biographia, philosophia, phantasia* and *geographia*. *Solar erythrodermatitis, sclerodermatitis* and *pyodermatitis*, for example, would also be satisfactory, in place of *erythrodermia* or *erythroderma*—or *erythrosis*, corresponding to the *érythrose* of the French. The use of *erythrodermy* in place of *erythrodermia* or *erythroderma* would prevent the common error of using *erythrodermas* instead of *erythrodermata* for the plural, as well as the use of *gummas* instead of *gummata, tuberculomas* instead of *tuberculomata* and *hemangiomas* instead of *hemangiomata*.

Hospitals are ordered to use a special nomenclature for sake of statistics. Authors are requested to use a certain uniform style in medical writing. Perhaps it would help if in the future medical writers were officially invited to use only certain terms in capital letters, to use the many others between parentheses in small letters for the sake of history and possibly to discard some altogether.

170 Waterman Street (6).

2. Hydroa is not neuter, as apparently generally considered, but feminine.

Society Transactions

SAN FRANCISCO DERMATOLOGICAL SOCIETY

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Feb. 12, 1949

A Case for Diagnosis (Perifolliculitis Capitis Abscedens et Suffodiens?).
Presented by DR. OTTO E. L. SCHMIDT and (by invitation) DR. W. E. WEBER.

L. L., a 51 year old Negro, first acquired pustules in the occipital region nine years ago. The condition was treated with various ointments but extended to involve a large portion of the scalp, attended by the development of alopecia in the occipital region. Exacerbations with a purulent discharge have occurred, but there has never been a complete remission. There is a history of a penile lesion acquired fifteen years ago, with a positive reaction to a blood test for syphilis two years before presentation. The patient was given sixteen injections into the arm and hip one year ago, the diagnosis being latent syphilis. There is a 4 by 6 cm. area of partial alopecia over the occiput. The area feels boggy and fluctuant, with some induration. There are many fluctuant elevated nodules varying in size from 3 mm. to 1 cm. Partial alopecia is present, and when a hair is removed pus may be expressed from the follicular opening. No draining sinuses or apparent connecting sinuses could be demonstrated. Observations on physical examination were not contributory. Blood tests for syphilis, except the Hinton test, gave negative reactions. The hemogram and results of urinalysis were normal. A bacterial culture revealed the presence of a coagulase-positive Staphylococcus aureus and diphtheroids. Cultures on Sabouraud's medium showed no fungus growth. The patient has been given no topical therapy. He received 6,000,000 units of penicillin two weeks ago for his inadequately treated latent syphilis.

FOLLOW-UP NOTE.—He was placed on treatment with sulfadiazine and sulfamerazine, 2 Gm. daily, for twenty-five days with an equivalent dose of sodium bicarbonate. There was slight response over the first two weeks, with the purulent component being diminished, but on the last examination, on Jan. 18, 1949, little progress was noted. There has been no increase in the size of the involved area.

DISCUSSION

DR. FREDERICK NOVY JR., Oakland, Calif.: My associates and I have a similar case at Letterman General Hospital which we classified as folliculitis decalvans. In perifolliculitis abscedens et suffodiens the process is much deeper and more purulent and the scarring is greater. Our patient has been receiving penicillin, as well as the application of mercury bichloride compresses and a urea and sulfathiazole powder, and the condition has been improving nicely.

DR. PHILIP K. ALLEN, San Diego, Calif.: The case presented is essentially a superficial pustular folliculitis, complicated by keloid formation. This type of lesion is seen not infrequently in the Negro race and should be classified, I believe, as dermatitis papillaris cappillitii.

DR. NELSON PAUL ANDERSON, Los Angeles: The appearance is more like that of a lupoid sycosis of the type which is seen in Negroes with peculiar kinky hair. The condition starts as a pustular folliculitis and then becomes pseudogranulomatous. A deep specimen should be taken for biopsy, as there is a possibility of finding either a coiled hair or hair remnants in the lesions. Since there has been no response to the administration of 6,000,000 units of penicillin for the syphilitic infection, the patient should have from 10,000,000 to 20,000,000 units of penicillin in order to attempt to clear the scalp lesions. There is no exact counterpart of this condition occurring in white persons.

Fox-Fordyce Disease Uninfluenced by Treatment with Roentgen Radiation and Topical Measures. Presented (by invitation) by LIEUTENANT COLONEL ROBERT S. HIGDON, Medical Corps.

The patient is currently being treated in the endocrine clinic and has been given gradually increasing doses of diethylstilbestrol for the past three months; the present dose is 3 mg. daily. She has recently noticed some irregularity in her menstruation.

DISCUSSION

DR. HARRY TEMPLETON, Oakland, Calif.: In view of the fact that this disease is supposed to be on an endocrine basis, and in view of the fact that treatment with diethylstilbestrol has been tried and has not worked, I should suggest trying the administration of testosterone on an experimental basis.

DR. REES B. REES: Another suggestion would be the use of thiamine hydrochloride in large doses, appropos of some investigations performed by a pathologist in this city, Dr. Gerson Biskind, as a result of which he expressed the opinion that estrogens are better metabolized by the liver if large doses of thiamine are given. If this combination is helpful in chronic cystic mastitis, it is possible it would be of value in this condition.

DR. NORMAN EPSTEIN: I should like to report the successful treatment of a similar patient by the use of endocrine therapy. The patient is a woman in her forties whose condition responded after many months of treatment. The endocrinologist used a variety of endocrine substances before this result was obtained. Our therapy had been unsuccessful.

DR. LEON F. RAY, Portland, Ore.: I have one suggestion, that is, the use of estrone ointment locally. I have had some experience with cases in which diethylstilbestrol and similar preparations used by mouth were of no help and in which a cream of these preparations applied locally gave reasonable benefits.

DR. GEORGE LENAHAN: I do not feel that diethylstilbestrol is necessarily the endocrine preparation of choice. I feel that even the estrone preparations are probably not the true female hormones and that alpha estradiol should be used. As far as local therapy is concerned, I feel that an alcoholic solution would be preferable to a cream; 10 mg. of alpha estradiol can be dissolved in absolute alcohol and then diluted to 4 ounces (113 Gm.) in 70 per cent alcohol to make a very satisfactory topical application. I feel this treatment should be tried before the administration of testosterone.

Amebiasis Cutis (?). Granuloma of Buttocks. Presented by DR. PAUL FASAL.

DISCUSSION

DR. PAUL FASAL: So far we have not succeeded in finding amebas in smears or cultures from pus or stools. But, as you know, it is often most difficult to

find the amebas, and large numbers of specimens have to be examined. I have seen amebiasis of the skin in the Far East, but always the ulcerative form and never the type presented by this patient. There have been cases reported of amebiasis of the rectum and colon which lead to abscess formation of the buttocks, and so I hope that my associates and I will be able to find the organisms.

A Case for Diagnosis (Ganglioneuroma? Histiocytoma? Myoblastoma?).
Presented by DR. H. V. ALLINGTON, Oakland, Calif.

Mrs. A. T., a 63 year old white woman, was first seen by me on March 18, 1948. She had erythematous and infiltrated lesions which were suggestive of granuloma annulare about the interphalangeal joints and knuckles, of one month's duration. The erythema was more pronounced and diffuse than one would expect. There were several small pale pinkish nodules as well. The patient was known to have arterial hypertension and had had a small goiter for ten years. The skin lesions were tender but not painful. The patient has chronic arthritis with hypertrophic changes of the interphalangeal joints. Sensations are normal. A Mantoux test with purified protein derivative, first strength, gave negative reactions. A highly sensitive reaction resulted from the use of the second strength. A Kahn reaction of the blood was negative. The erythrocyte count was 2,900,000, with a hemoglobin estimation of 74.2 per cent. The leukocyte count was 7,800, with 38 per cent polymorphonuclear leukocytes and 62 per cent lymphocytes. No abnormalities were found in the results of urinalysis. Histologically, a tentative diagnosis of sarcoid was made, and the patient was given 950 r in divided doses between March 30 and July 20. She received potassium arsenite (Fowler's) solution over a six week period. She had been taking erythrityl tetranitrate and phenobarbital for her hypertension under the direction of her family physician. Improvement in the skin lesions occurred temporarily, and then there was regression. On August 20 new nodules were found on the fingers, hands and forearms and there was one on each side of the nose. A second biopsy was performed on a specimen from the lesion on the right elbow.

Dr. Paul Michael found an intact epithelium. In the superficial part of the corium was a growth composed of large granular cells interspersed between fibrous tissue fibers. These cells were large, acidophilic and granular, with small nuclei and vesicular nucleoli. They were well differentiated and showed no mitotic figures. No definite evidence of cross striations could be seen, but in many areas there were cells similar to the granular cells of primitive striated muscle. The differential diagnosis, histologically, included fibroxanthoma of an atypical variety and granular cell myoblastoma. The multiplicity of the lesions was against the diagnosis of granular cell myoblastoma, but the histologic structure appeared to be compatible. Dr. Michael suggested studies of lipid and determination of the blood cholesterol. In September 1948 the blood cholesterol was found to be 180 mg. per hundred cubic centimeters. The basal metabolic rate was +60. A roentgenogram of the chest showed a soft tissue mass in the lower cervical region (goiter), an enlarged heart, arteriolosclerosis and pulmonary emphysema. The patient's family physician has recently commenced treatment with propylthiouracil.

DISCUSSION

DR. L. H. WINER, Beverly Hills, Calif.: The patient has nodules on her fingers and similar small nodules within the healed thyroidectomy scar. These nodules felt firm and hard like an infiltrative process. The histopathologic section showed the epidermis atrophic, with slight hyperkeratosis. The upper portion

of the cutis appeared normal. The middle and lower parts of the cutis were invaded by nests of cells which contained round vesicular nuclei and cytoplasm which looked like a syncytium. Against a diagnosis of myoblastoma is the absence of the granular cytoplasm. The process could be of nerve origin since the cells have an embryonal appearance. One must consider ganglioneuroma. I would suggest sections be cut 20 microns thick and prepared with a stain for nerve tissue. The thyroid tissue removed at thyroidectomy should be examined for the possibility of malignant growth of the thyroid.

DR. STUART C. WAY: The cells are of a neurogenic type, but the lesion is not a ganglioneuroma. It may be linked with the pathologic process in the thyroid. One should reexamine the thyroid tissue.

DR. MERLIN MAYNARD: I saw a case which was similar clinically which proved to be one of gout.

Generalized Granuloma Annulare. Presented by DR. NORMAN EPSTEIN and (by invitation) DR. JAMES ALLEN.

L. L., a middle-aged woman, first acquired lesions on each elbow ten years ago. Two years ago the axillary and inguinal regions became involved. An eruption appeared on the flexor surface of each wrist one year ago. During the last two months new lesions have appeared on the inner aspects of the thighs and about the knees. Subjective symptoms have been mild. There are irregular, mildly erythematous and slightly infiltrated patches in the axillary regions with a few scattered tiny reddish papules marginally. Similar lesions involve the inguinal areas. On each forearm below the elbow is a group of flesh-colored scaly papules. On the inner surfaces of the thighs there are dull red papules with slightly raised infiltrated lesions measuring from a few millimeters to 3 cm. General physical examination showed no other abnormalities. Laboratory observations were normal. A sedimentation rate (corrected) was 16 mm. Results of roentgenologic examination of the chest were not contributory. An intradermal test with tuberculin (1:500) gave a strongly positive reaction. Histologically there was focal necrosis with a granulomatous reaction in the midcorium compatible with granuloma annulare. The patient was started on treatment with 50,000 units of vitamin D given orally three times daily.

DISCUSSION

DR. FLETCHER HALL, Santa Monica, Calif.: This case seems to be an exact replica of one I presented at the last joint meeting at the White Memorial Hospital in Los Angeles a year ago. This case was presented under the title of "Granuloma Annulare with Dissemination Following Calciferol Therapy" (ARCH. DERMAT. & SYPH. **61**:145 [Jan.] 1950). Dr. Epstein tells me that in the present case the condition got worse, but that its doing so was not apparently as closely tied up with the administration of vitamin D as it appeared to be in my case. Dr. Michelson and Dr. Laymon of Minneapolis, who were in Los Angeles last spring, expressed the opinion that my case was similar to one they and Dr. L. H. Winer had seen and called tuberculid en plaque, which they observed to clear after the use of diethylstilbestrol. With that as a rationale for therapy, I gave diethylstilbestrol in small doses, up to 1 mg. intramuscularly twice a week, later changing to the administration of diethylstilbestrol by mouth. The condition cleared rapidly, not only the disseminated lesions but also the typical annular lesions, which my patient presented in a little more recognizable form than those seen in this case. I have no idea of the mechanism involved in this treatment but would recommend that it be tried in the present case.

DR. L. H. WINER, Beverly Hills, Calif.: Dr. Sweitzer originally reported tuberculid en plaque and was corroborated in his diagnosis by Dr. Oscar Gans, who was in this country in 1927. Subsequently the patient's eruption cleared up during each of two pregnancies only to recur each time after parturition. This patient on treatment with diethylstilbestrol subsequently had clearing of the lesions.

DR. WALTER NICKEL, San Diego, Calif.: Regarding the basis for diagnosing tuberculid en plaque, Dr. Gans of Heidelberg reported the presence of epithelioid cells and epithelioid giant cells in a so-called tuberculid en plaque. Our patient was treated for pulmonary tuberculosis in a sanitarium and did not have a positive reaction to a tuberculin test.

DR. NORMAN EPSTEIN: The section that was presented was from a lesion that had been present only a few days. As far as treatment is concerned, the matter was discussed at the Academy in December. It was generally agreed that there was no effective treatment for granuloma annulare, that it tended to subside and to undergo remission by itself. This patient's condition did seem to get worse after two or three weeks of treatment with vitamin D. The lesions have subsided 50 per cent with fractional doses of roentgen irradiation over large areas of her skin.

DR. H. V. ALLINGTON, Oakland, Calif.: Has anyone treated ordinary granuloma annulare with diethylstilbestrol? Might it be indicated because of the fact that granuloma annulare occurs more commonly in women or children?

DR. FRANCES KEDDIE, Palo Alto, Calif.: Has anyone seen granuloma annulare in an adult male or during pregnancy?

DR. LAWRENCE M. NELSON, Santa Barbara, Calif.: Yes, I have seen it in a man with severe acne.

DR. NORMAN EPSTEIN: I have 2 male patients with granuloma annulare; 1 shows a large number of lesions on the hands.

Dermatitis of Seven Years' Duration, Originally Due to Cement. Presented by DR. ERVIN EPSTEIN, Oakland, Calif.

DISCUSSION

DR. ERVIN EPSTEIN, Oakland, Calif.: When this eruption started it was not only on the neck but also on the hands, forearms and knees. The knees are a very common location in cement dermatitis, the finisher getting down on his knees in the cement. Generalization of the dermatitis developed very shortly after the cement dermatitis started. We have four problems:

1. Is this still a cement dermatitis? We have no proof that it is anything else. We do know that cement dermatitis can go on for a long time.

2. As to lymphoblastoma, this diagnosis was brought up when this case was discussed before. This patient has been investigated thoroughly for lymphoblastoma. He has had sternal punctures, biopsies of lymph nodes and biopsies of skin. He has been followed over a long period, but there has never been any evidence from the laboratory standpoint that could be construed as suggestive of lymphoblastoma.

3. As far as dermatomyositis is concerned, biopsy showed that definitely. Clinically, the dermatitis is not very suggestive of this diagnosis. Large nodules develop from time to time. Surprisingly enough, these disappear by themselves in a comparatively short time. Histologically, these are composed of necrotic muscle tissue with inflammatory changes. The patient has creatinuria, which is

significant. He does have a histopathologic diagnosis of dermatomyositis made by several competent pathologists.

4. The patient is absolutely resistant to any type of therapy that has been suggested for him. I feel that he has an arteritis, perhaps of the dermatomyositis or periarteritis nodosa type.

DR. JUD R. SCHOLTZ, Pasadena, Calif.: A patient of mine with a skin picture very much like this man's turned out to have multiple myeloma. I wonder if the present patient should have roentgenologic examination of the bones.

Juxta-Articular Nodes of Syphilitic Origin. Presented by DR. PAUL FASAL.

DISCUSSION

DR. JUD R. SCHOLTZ, Pasadena, Calif.: One usually thinks of these lesions as being manifestations of late syphilis. One wonders whether inadequate treatment of syphilis at the time the patient had gonorrhea four years ago speeded up the changes usually associated with lesions of this type.

DR. PAUL FASAL: I feel as Dr. Scholtz does, that this patient apparently acquired syphilis at the same time he acquired gonorrhea and that the penicillin treatment for gonorrhea masked the syphilis in the beginning and later accelerated its course. It seems to me of interest that I have seen juxta-articular nodes of syphilitic origin only in Negroes. Years ago I saw juxta-articular nodes caused by yaws in natives of Malaya and recently some caused by pinta in Mexicans. I wonder whether there is a racial disposition for juxta-articular nodes.

Lichen Sclerosus et Atrophicus of Breasts, Trunk and Anogenital Areas. Presented by DR. LEO M. COLUMBUS.

Lichen Sclerosus et Atrophicus of Breasts and Anogenital Regions. Presented by DR. PAUL FASAL.

DISCUSSION OF CASES OF LICHEN SCLEROSUS ET ATROPHICUS

DR. D. E. H. CLEVELAND, Vancouver, British Columbia, Canada: When I first saw a case of this kind, modern endocrine preparations and antibiotics were not in use. I treated a girl in her teens with fractional doses of roentgen radiation, sharply screened onto the areas involved, which were nearly all suprascapular. The areas cleared up completely. Twelve years later the lesions had not recurred and there was no sign of ill effects from the roentgen rays. The patient had new lesions then around the umbilicus and genitalia. Treatment with roentgen radiation was not mentioned in the present cases.

DR. NELSON PAUL ANDERSON, Los Angeles: The second patient had a beautiful and very typical histologic section, and the lesions about the genitalia were very typical. The first case was very typical of lichen sclerosus et atrophicus. The patient gives an interesting history, in that she apparently had a false or premature menopause when 38 years of age, at which time she stopped menstruating. About three or four years later her son was killed in a football accident and suddenly her menstruation was resumed. Her periods lasted until two and one half years ago, at which time they ceased. The duration of the disorder of the skin in this patient is two and one-half years. To my mind that observation brings forth mention of the fact that these cases of lichen sclerosus et atrophicus for the most part are definitely of an endocrine nature, related to the cessation of the menstrual periods. Those cases that occur rarely in the male, and extremely

rarely in children, are probably also on an endocrine basis. For three years I have used premarin® (estrogenic substances [water soluble] ointment locally in such cases. I feel that in Dr. Columbus' case the ointment has not been given a fair trial. It has been disconcerting to have women patients aged 58 or 65 who are using estrogenic substance ointment start to menstruate. Such an occurrence necessitates hospitalization and a curettement to exclude the possibility that the estrogens might have lighted up a malignant process. Nevertheless, I am sure that lichen sclerosus et atrophicus is not an irreversible condition; some of the patients recover spontaneously. Whether this recovery takes place because of an endocrine readjustment I don't know, but I feel certain that estrogenic ointment is the treatment of choice. The histologic appearance in these cases is deceiving, and the clinical appearance is deceiving. Some of these lesions present bullae; others have hemorrhagic bullae, and rarely they may have hyperkeratotic crusts on the surface. A year ago Dr. Sternberg presented such a patient before the Los Angeles Dermatological Society, with a lesion on the back which was covered by huge hyperkeratotic adherent crusts. Incidentally, the condition of Dr. Sternberg's patient is very much improved after application of estrogenic ointment. Returning to the pathologic changes, I am sure that in dermatology we have let various terminologies take the place of ideas. We see amyloid degeneration in a section and immediately conclude that the condition is an irreversible change. As a matter of fact, it is not; patients have had generalized amyloidosis in which the amyloid change has been reversed and from which they have recovered. The same possibility exists in colloid degeneration, as is witnessed by the case Dr. Way presented a number of years ago. His case, as well as others since reported, showed that this condition is a reversible change, at least in some cases. We speak of myxomatous degeneration, such as the localized myxedematous change that occurs on the lower legs of a person with hyperthyroidism either before or after operation. This also is not an irreversible change because usually the patients get well spontaneously over a period of years. There is a whole group of conditions which we are apt to look on as degenerative, and, therefore, the idea immediately comes to mind that such a change is irreversible. I wish to make a plea that we not let our terminology interfere with our thinking.

Dr. Ben A. Newman, Los Angeles: Localized sclerodermas are similar to lichen sclerosus et atrophicus, and they may be the same disease. For many years endocrine therapy was suggested, long before effective endocrine therapy existed. One gave treatment with ovarian preparations or some such type of therapy in the hope of reversing the changes that occur in these lesions. Recently I made an interesting observation in several patients with localized scleredema, with isolated patches, in whom was found visceral involvement, as occurs in generalized scleroderma.

Dr. L. H. Winer, Beverly Hills, Calif.: I wish to support Dr. Anderson's suggestion that we consider atrophy a degenerative process which is at times reversible; however, when the elastic tissue undergoes degeneration, then atrophy is permanent. Degeneration of collagen does not always result in permanent changes. The tendency to form crusts and hemorrhages is explainable on the basis of the degeneration of the collagen which supports the small vessels and capillaries and thus makes them more susceptible to most minor trauma.

Dr. Samuel Ayres Jr., Los Angeles: I am in agreement on the value of the hormones, the local use of cream containing estrogenic substances and the administration of diethylstilbestrol by mouth, in these cases. The condition certainly does occur predominantly in women past the menopausal age. In some cases in

which the condition was recalcitrant to estrogen therapy, and before the use of estrogen locally was resorted to, one of my associates, Dr. Joseph I. Mirovich, suggested freezing with solid carbon dioxide, a procedure carried out in a number of cases with rather brilliant results. It is rather surprising that this type of therapy benefits such a condition. Freezing with solid carbon dioxide in a comparatively few treatments has led to softening and complete disappearance of the lesions, with replacement by very soft white scars.

DR. MERLIN MAYNARD, San Jose, Calif.: Having a one track mind, I believe that all these scleroses—scleroderma, white spot disease or whatever—are due to calcium imbibition by the collagen. For years we have given calciferol, or viosterol prior to that, in these cases, and I have yet to feel I have failed in treatment. The first patient whose case I presented has been under my observation many years and is now perfectly well with no trace of the original lesions; this patient was treated for eighteen months with moderate doses of calciferol or viosterol, in about 1933. Since that time I have treated roentgen sclerosis, balanitis xerotica obliterans and other cases of lichen sclerosus, scleroderma and morphea, with softening of the lesions and almost complete recovery of the normal appearance of the skin. Certainly the condition is no irreversible process. Whether what I am doing is removing the accumulation of calcium or getting better function in the collagen or what exactly is happening I do not know. The patients are all put on a calcium-poor diet, and administration is kept up for three months to as long as eighteen months. If they persist in the treatment and use it all that time, they finally do get good results.

Reiter's Disease (?). Psoriasis (?). Presented by DR. ERVIN EPSTEIN.

E. D., a 38 year old white man, was first seen by me in May 1945. His history was formally presented in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY (**56**:191 [Aug.] 1947).

A Case for Diagnosis (Poikiloderma Atrophicans Vasculare?). Presented by DR. JULIAN LUNSFORD.

Scleredema Adultorum: Third Attack in Seventeen Years. Presented (by invitation) by DR. W. E. WEBER.

Necrobiosis Lipoidica Diabeticorum. Presented by DR. JULES M. KEY.

Chronic Granuloma of the Nose: Cause? Presented by DR. GRANT MORROW.

Scleroma (?) and Parapsoriasis. Presented by DR. ROBERT LOFGREN.

Hodgkin's Disease; Eczematous Plaques. Presented by DR. NORMAN EPSTEIN and (by invitation) DR. JAMES ALLEN.

Roentgen Atrophy and Telangiectasia of Hands. Presented by DR. EDWARD RINGROSE and (by invitation) DR. G. H. EKBLAD.

MANHATTAN DERMATOLOGIC SOCIETY

Herman Sharlit, M.D., *President*

George M. Lewis, M.D., *Secretary*

March 8, 1949

Localized Lymphoblastoma (Spiegler-Fendt Type): Nodule on Forearm. Presented by DR. ORLANDO CANIZARES.

DISCUSSION

DR. ARTHUR B. KERN (by invitation): Recently at Bellevue Hospital we studied a patient who, clinically and histologically during the early period of observation, was considered to show typical mycosis fungoides. Repeated biopsies,

however, revealed a change in histologic structure to that of Spiegler-Fendt sarcoid. The patient soon started on a downhill course, and before death occurred a number of biopsies revealed a picture typical of reticulum cell sarcoma. This case points to a relation between mycosis fungoides, Spiegler-Fendt sarcoid and reticulum cell sarcoma. I should therefore like to suggest that Dr. Canizares' patient be watched carefully in case this lesion might be the type of Spiegler-Fendt sarcoid which will later show a change in structure to that of reticulum cell sarcoma.

Mycosis Fungoides. Presented by DR. GEORGE C. ANDREWS.

J. N., a woman aged 41, was previously presented before the New York Dermatological Society on Feb. 28, 1948, with a diagnosis of granuloma annulare. She was first seen at the Vanderbilt Clinic in July 1943, with a contact dermatitis of the eyelids which responded quickly to local treatment. One year later she complained of small psoriasiform patches on the legs, which cleared in a month with treatment with ultraviolet radiation (alpine® light) and a tar ointment. The Wassermann reaction was negative. The patient was not seen again until November, 1947, when she exhibited an annular slightly raised, erythematous and pruritic patch on the back of the neck. A biopsy (Dr. G. F. Machacek) showed large foci of perivascular infiltration in the corium and degeneration of the blood vessel walls. The foci of inflammatory reaction were arranged about an area of necrobiosis. The diagnosis was erythema elevatum diutinum(?). Biopsy was repeated in January 1948; no necrobiosis was seen on this occasion, but perivascular and perifollicular infiltration was still present. The diagnosis was dermatitis.

Results of urinalysis, blood counts and roentgenograms of the chest were normal. The tuberculin test elicited a positive reaction with a dilution of 1 : 10,000. No organisms were revealed by repeated mycologic examinations except cultures from the toe nails, which yielded Trichophyton rubrum.

The initial lesion responded to fractional doses of 100 r up to a total of 800 r. During the summer new lesions continued to crop out on the sides of the neck and chest. The response to roentgen rays was always good.

I did not see the patient from November until the present time. She went to the New York Post-Graduate Hospital, where another biopsy showed mycosis fungoides. In the interim the character of the lesions has changed. They are more infiltrated, and many exhibit small nodules at the periphery.

DISCUSSION

DR. HOWARD FOX: I saw this case in February 1948, at which time the eruption did not look like the present one. The diagnosis then was erythema elevatum diutinum, which is out of the question now. One of the points I have always made is the difference in elevation in these lesions; the edge of the lesion may be raised, and the circinate forms are specially characteristic.

DR. DAVID BLOOM: In a case seen at Bellevue Hospital more than twenty years ago, it could not be determined whether the early lesions on the face were those of lupus erythematosus or those of sarcoid. Several years later the patient presented lesions typical of mycosis fungoides, and recently I saw him on the point of death with numerous large and deep ulcerations.

DR. HOWARD FOX: A patient whose case I reported from my father's clinic had been seen for twenty-eight years with what everybody diagnosed as ordinary psoriasis. Raised lesions finally developed, and Dr. Pollitzer helped me with the histologic diagnosis. The case was published as mycosis fungoides occurring in a case that had been considered psoriasis for many years.

DR. WILBERT SACHS: There is a group of lesions on the neck that would also give the impression of granuloma annulare. However, the microscopic picture and the clinical appearance of the other lesions are those of mycosis fungoides.

DR. GEORGE M. LEWIS: There was one lesion on the left side of the neck that might be considered granuloma annulare. As Dr. Cipollaro mentioned, the patient may have two diseases, which possibility would fit in with the diagnosis of erythema elevatum diutinum made some time ago.

DR. GEORGE C. ANDREWS: I noticed the lesion resembling granuloma annulare, and the picture seen in the original section would fit in with that diagnosis. There are other lesions—deeply infiltrated, thickened plaques which are not suggestive of granuloma annulare—and, with the histologic report in writing from the Skin and Cancer Unit of the observation of definite mycosis fungoides, I don't think the disorder is granuloma annulare.

Papulonecrotic Tuberculid: Improvement from Penicillin Therapy. Presented by DR. MAURICE J. COSTELLO.

DISCUSSION

DR. DAVID BLOOM: In cases of tuberculosis which respond so well to penicillin, one must assume that the appearance of the lesion is due mainly to pyogenic micro-organisms superimposed secondarily on a tuberculous stratum. In a case of Dr. Rosen's, a fungating lesion of scrofuloderma responded very quickly to treatment with a sulfonamide preparation. Papulonecrotic tuberculid, if one may judge from the case presented, in another example of a tuberculous lesion in which pyogenic micro-organisms play a great role in production of the lesion.

Moniliasis: Infectious Eczematoid Dermatitis? Presented by DR. MAURICE J. COSTELLO.

Y. K., a woman aged 52, was admitted on Jan. 10, 1949, to Bellevue Hospital with the complaint of dizziness, nausea and vertigo and also a chronic dermatitis of the ears, folds of the breasts, groins and eyes. This patient has been treated in the Bellevue Hospital clinics since 1931. Her complaints have included symptoms referable to skin, bones, nervous system, ears, nose and throat, chest and genital system. In 1927 she had a hysterectomy and bilateral salpingo-oophorectomy at Mount Sinai Hospital. Her dermatologic diagnoses have included senile vaginitis, infectious eczematoid dermatitis, moniliasis, pustular eruption of the ears and scalp and seborrheic dermatitis. Her orthopedic diagnoses have included hallux valgus, arthritis of the spine and osteoporosis. Her neurologic diagnosis has been syphilis of the central nervous system (with negative reactions to blood and spinal fluid tests for syphilis). Among the otorhinolaryngologic diagnoses have been chronic sinusitis, atrophic rhinits, sclerosis of the mastoids and Ménière's syndrome. Medical diagnoses have been chronic bronchiectasis and menopausal syndrome. Roentgenograms have substantiated most of these diagnoses and also have shown pronounced hyperostosis frontalis interna.

The patient has run the gamut of dermatologic therapy. She has been helped by some forms of therapy (usually the application of wet compresses and dyes) and has suffered exacerbations under others. She has had exposures to roentgen rays, grenz rays and ultraviolet radiation, each with moderate benefit. Scrapings and cultures for monilia have been negative on many occasions, but recent stool culture showed typical moniliasis on culture and culture mount. Yeast-like colonies were seen on cultures from the groin and sputum.

DISCUSSION

DR. GEORGE C. ANDREWS: I agree with Dr. Lewis that the only way to cure this woman is to reduce her weight by about 30 pounds (14 Kg.), give her crude liver extract and improve her general condition. That is the best way to treat moniliasis in these obese people. Locally, methylrosaniline chloride is the outstanding remedy, but occasionally iodine is also beneficial. My associates and I have a patient, a child who has been frequently shown before the Society, with extensive moniliasis who has had every treatment except the administration of aureomycin, without any success. She had so much internal administration of iodides that she acquired a tuberous iodide eruption, which cleared up when treatment with iodides was discontinued.

Multiple Destructive Lesions of Tertiary Syphilis, Treated with Penicillin. Presented by DR. THOMAS N. GRAHAM.

G. L., a Negro woman aged 41, was admitted to Bellevue Hospital on Oct. 28, 1948. At that time she had destructive lesions of the forehead, shoulders and left leg, of approximately four months' duration. There was, in addition, severe weakness and loss of weight. There was no history of syphilis. However, all serologic tests gave strongly positive reactions (quantitative Kahn, 2048). The results of examination of the spinal fluid were normal. Roentgenograms showed multiple areas of destruction involving the right scapula and humerus, skull, femurs, tibias and fibulas, with sclerosis. A diagnosis of tertiary syphilis was made, and the patient was given 6,000,000 units of penicillin from November 13 to December 1, receiving 600,000 units of procaine penicillin every forty-eight hours, for ten doses. There has been great improvement in the general condition of the patient, with slow healing of the cutaneous and osseous lesions. Her weight increased from 98 pounds (45 Kg.) on admission to 135 pounds (61 Kg.) on March 2, 1949. The quantitative Kahn reaction had fallen to 64 on January 31.

DISCUSSION

DR. ISADORE ROSEN: Such patients have died from involvement of the inner table of the skull, with hemorrhage. This patient has considerable destruction of the outer table, and the inner table may become involved, with death. She still has active lesions after receiving 6,000,0000 units of penicillin. She should now be given large doses of iodides and bismuth preparations, and if she does not respond she should receive fever therapy.

DR. NATHAN SOBEL: I want to agree with Dr. Rosen.

DR. ARTHUR B. KERN (by invitation): Despite the fact that the ulcer of the forehead has shown little change, I belive that treatment has been adequate and that little would be gained by further injections of penicillin or bismuth or arsenic preparations at present. There has been notable gain in weight and improvement in the general condition since the course of treatment; further, the ulcer of the leg has shown appreciable healing. Finally, and most important, there is the fall in the quantitative Kahn titers from 2048 to 64. I am sure that repeated serologic tests will demonstrate a return to negativity without further therapy.

Scleredema Adultorum (Buschke). Presented by DR. DAVID BLOOM.

DISCUSSION

DR. DAVID BLOOM: Frequent questioning of the patient revealed that his attacks of grip occurred five years ago. Since then he has had only occasional slight colds. He does not complain of difficulty in breathing but states that he

gets attacks of tightness of the abdomen and chest. He is a wood finisher and exposed to solvents, and we must keep in mind that these substances might be a possible causative factor. We injected hyaluronidase into several areas of tight skin, and this procedure resulted in softness of the area treated, but after a few days the skin returned to its previous firmness.

Pemphigus Vulgaris Treated with Aureomycin. Presented by DR. THOMAS N. GRAHAM.

DISCUSSION

DR. GEORGE C. ANDREWS: This case looks much like one I have recently presented at the New York Dermatological Society and also at the New York Academy of Medicine, showing similar results in the treatment of pemphigus with aureomycin. Both patients had lesions in the mouth and profuse bullae, and my patient in addition had a temperature as high as 104, and we did not think he would live more than a few days. He was discharged and is now home. We have had other cases in which we have obtained good results with aureomycin. One other case I presented at the New York Dermatological Society, where it was questioned whether the patient had dermatitis herpetiformis or pemphigus. He had oral lesions and an extensive bullous eruption but a history of probable dermatitis herpetiformis for years. Then we had another case in which the lesions responded very well to aureomycin therapy; there were oral lesions, bullae all over and vegetating lesions in the axillas, and the condition of the hands and feet was very bad. With aureomycin the lesions cleared up entirely except for a few in the mouth. Then the medical intern made a mistake and gave the aureomycin in very concentrated dilution—0.5 Gm. in 40 cc. with a syringe—and the occurrence almost killed the patient. He collapsed and manifested hematuria, and we didn't think he would live. The next day the lesions broke out with bullae on his wrist, and we have had trouble controlling the disease since, although the patient has received as much as 10 Gm. of aureomycin daily. Aureomycin kills off some of the intestinal bacteria which synthesize vitamin B. Our patients have received vitamins although sometimes administering them was difficult because of nausea.

DR. MAURICE J. COSTELLO: I don't think the diagnosis of pemphigus has been established in this case. The condition was not diagnosed as such histologically. The man has a great deal of itching, and his general condition is fairly good. Our experience with aureomycin in about 8 cases of pemphigus now has been rather disappointing. The only patient really improved was one with pemphigus vegetans.

Tuberculous Sinus Opening in Parasternal Region of a Child. Presented by DR. MAURICE J. COSTELLO.

Sarcoidosis of the Skin (Leprosy?). Presented by DR. PAUL GROSS.

NEW YORK DERMATOLOGICAL SOCIETY

Frank C. Combes, M.D., *President*

John C. Graham, M.D., *Secretary*

March 22, 1949

Malignant Melanoma. Presented by DR. GEORGE C. ANDREWS.

G. W., a woman aged 21, acquired a mole on the right cheek three or four months ago. At the onset it was red, and then it turned dark brown and increased to about 8 mm. in diameter. There were no hairs in the lesion. It was removed by another physician by electrodesiccation one month ago.

There is a slighty erythematous and depressed scar at the center of the right cheek about 1 cm. posterior to a brown, hairy mole. About 5 mm. above this scar is a small papule which looks like an acne lesion. About 3 mm. above that is a small lentigo. No lymph nodes are palpable in the preauricular, mandibular or anterior cervical areas.

Biopsy, reported by Dr. Fred Weidman of Philadelphia, revealed nonpigmented melanoma.

The patient is presented for suggestions for further therapy.

DISCUSSION

Dr. A. Benson Cannon: I am inclined to doubt the diagnosis of melanoma in this case. If the lesions were malignant melanomas, nothing could be done. I presented a 13 year old boy before this Society with a nevus of bathing trunk distribution that had been diagnosed as melanocarcinoma when he was 2 years old. At the age of 13 the boy was still healthy and strong. A biopsy specimen at that time showed melanocarcinoma, according to three excellent pathologists. I have another patient whom I saw as a young girl in 1926 with a histologic diagnosis of melanocarcinoma; she is still alive and well twenty-three years later. I could cite many similar cases. I think this patient has only a mole.

Dr. Wilbert Sachs: Microscopically this is not entirely a benign lesion. If it were labeled an early nevocarcinoma the prognosis would not be as serious. I believe the patient should get the benefit of treatment. If small biopsy specimens were taken at the corners of the excision and malignant cells were not present, the outlook would be brighter. The resultant scar would be only slightly larger than the present scar. I agree with those who believe it is unusual to see a patient with many benign nevi and an associated junction nevus.

Dr. Eugene F. Traub: I agree with Dr. Cannon that we see any number of patients who have a histologic report of malignant melanoma but in whom the lesions run a benign course, but certain cases he cited were those of youngsters who had had lesions from infancy. This girl had lesions which had developed only a few months before—a patch without a preexisting mole—and so here is a rapidly developing lesion that increased in size in a short period. I think the girl is entitled to the best advice. Her physician should be consulted as to how thoroughly he destroyed the lesion. I just had a patient sent up from Washington who gave an identical story, with partial removal of the lesion. My associates and I reexcised the area, and the report was again nevocarcinoma. Certainly the outlook would not have been good if it had been left alone.

Dr. Paul E. Bechet: The clinical appearance of the lesions does not favor the diagnosis of melanoma; some are only faintly pigmented, with the presence of hairs in a few, which last observation in itself is a sign of nonmalignancy. I have had the same experience as Dr. Cannon has had, with a patient with a single partially pigmented lesion on the ear. It was excised, and the late Dr. Walter Highman made a histologic diagnosis of melanosarcoma. The patient disappeared from observation and did not return until eight or nine years later, for the treatment of a contact dermatitis. The original lesion in the ear was well; there had been no recurrence or metastases. As the lesion had been removed for histologic examination only, it was plausible to presume that the histologic report had been in error and that the lesion had not been malignant.

Dr. George C. Andrews: I shall advise the girl to have a small piece of tissue examined. I would not advise any radical treatment.

Porokeratosis of Mibelli. Presented by DR. LESLIE P. BARKER.

F. P., a man aged 31, of Italian parentage, acquired at the age of 14 a flat, scaly area just above the left wrist. Since that time other lesions have gradually appeared in a linear arrangement from the wrist to above the left elbow. None have appeared on other parts of the body. No members of the family have ever had a similar condition, and the patient can trace this information accurately to the grandparents on both the mother's and the father's side. The patient has always been in good health and has had no subjective symptoms from the eruption.

Extending from just above the left wrist to above the elbow on the external aspect of the forearm, arranged in a linear fashion, are many discrete and confluent dime-sized to 25 cent piece–sized lesions each consisting of a slightly raised, wavy, lateral wall that is rough but at the apex of which no longitudinal groove can be seen. The central part of each of these plaquelike lesions is very slightly scaly and rough to the touch. A few lesions contain slightly elevated papules, about 3 to 4 mm. in diameter. Most of the hair has disappeared from the center of the lesions, and there is some wrinkling, slight atrophy and fine scaling.

Biopsy showed the typical picture of porokeratosis of Mibelli.

Lupus Vulgaris. Presented by DR. GEORGE C. ANDREWS.

J. M., a woman aged 48, was first seen by me in April 1948, with a history of rash on the forehead and extensor surfaces of the arms of six months' duration. She had been running a dairy farm for eight years on Long Island. There is no history of previous tuberculosis.

On the extensor surfaces of both forearms, especially on the left, are red, blotchy, scaly, somewhat infiltrated lesions which on diascopic pressure show typical brownish red, jelly-like papules. Similar lesions are scattered on the forehead.

The results of urinalysis were normal, and serologic tests for syphilis gave negative reactions. Roentgenograms of the lungs showed no foci of infiltration or consolidation and no evidence of active tuberculosis.

A biopsy specimen from the forearm on March 29, 1948, was reported on by the New York State Department of Health as follows: "The tuberculid suggested lupus, that is, tuberculosis of the skin."

A tuberculin test (old tuberculin) gave positive reactions with a dilution of 1 : 10,000.

Treatment has consisted of the administration of 150,000 units of calciferol daily for three months and the local application of promin® (sodium p, p'diaminodiphenylsulfone-N, N'-didextrose sulfonate) jelly. The last treatment was 4 weekly injections of gold sodium thiosulfate given intravenously.

DISCUSSION

DR. EUGENE F. TRAUB: Only on one other occasion have I seen a number of annular lesions that on histologic examination proved to be lupus vulgaris.

DR. MAURICE J. COSTELLO: This patient has lupus vulgaris. The lesions are disseminate on the face and forearms. The diagnosis that would appeal to me clinically would be lupus erythematosus unless the condition is the Leloir type of lupus vulgaris, which is very difficult to differentiate. I would think the eruption was not of external origin, but blood borne.

DR. FRANK E. CORMIA: I was interested in Dr. Costello's remarks, my conception being that the disease may be spread hematogenously and then by way of the lymphatics along the skin.

DR. GEORGE C. ANDREWS: The appearance is modified by the fact that my associates and I are treating the patient by ultraviolet irradiation, which is causing the erythema and exfoliation. I was loath to accept the diagnosis of lupus vulgaris when the patient was referred to me by another physician with that diagnosis. He had already performed a biopsy. I sent for the slide, and it was quite typical of lupus vulgaris. It has been known for years that the disease occurs in children in the country who come into contact with manure from tuberculous cattle. This woman has no sign of systemic tuberculosis. She has been examined carefully by an excellent internist. She gives a history of milking cows, and she herself thought that the eruption came from them.

Urticaria Pigmentosa. Presented by DR. J. LOWRY MILLER.

M. M., a man aged 48, was first seen in Vanderbilt Clinic on March 8, 1949. complaining of a generalized rash of ten years' duration.

The patient received a course of bismuth and arsenic therapy for latent syphilis discovered by a routine Wassermann test in 1939. Following this treatment he noted the onset of generalized mild freckling. He received a second and third course of bismuth and arsenic therapy in 1942 and 1943 because the serologic reaction of the blood remained positive. The eruption on his body has persisted since 1939 without remission, and the lesions have become more widespread. Pruritus, only slight at the onset, has increased in intensity to the present, and the patient states that it is so severe that he cannot sleep at night. He has consulted many physicians but has received no relief from the pruritus. A biopsy in 1939 was reported as showing purpuric dermatitis. Another biopsy made at the Marine Hospital, Staten Island, in 1943 was reported to reveal urticaria pigmentosa. The patient denies any drug intake except of acetylsalicylic acid during the last three weeks.

There is a generalized eruption consisting of reddish brown macules and papules arranged in a netlike distribution over practically the entire body except for the scalp and upper part of the face, elbows, palms and soles. On the face below the malar region but including the nose there is a diffuse brick red color with a few telangiectases. Over the flexor surface of the forearms and sides of the neck are large, lichenified reddish purple plaques. The papules are barely elevated above the skin, and their surface is smooth. In many areas they are confluent. There is slight dermographia. Individual lesions, when irritated, become slightly reddish and swollen. The buccal mucous membrane and palate are clear of lesions.

The Wassermann reaction of the blood was 4 +.

Biopsy disclosed an epidermis which contained a great deal of pigment in the deeper epithelial layers. In the cutis just beneath the epidermis was a scattering of chromatophores. The most striking change, however, consisted of perivascular infiltrations of cells. In some instances this appeared to be mainly of an inflammatory nature. However, surrounding most of the vessels there were large granular cells with central, fairly deeply staining nuclei which appeared to be mast cells. The granules were gray and very fine. Slides stained with methylene blue and eosin proved these to be mast cells. The diagnosis was urticaria pigmentosa.

DISCUSSION

DR. MAURICE J. COSTELLO: The late Dr. Astrachan presented a case similar to this at the Manhattan Dermatological Society about two years ago, and that

patient had some visual changes. Ophthalmologic examination indicated retinitis pigmentosa. It might be worth while having such an examination performed on this patient.

DR. A. BENSON CANNON: The patient presents lesions similar to poikiloderma vasculare atrophicans, although the itching plaques on the forearms suggest the diagnosis of premycosis fungoides. I have never seen a case of urticaria pigmentosa produced by arsenic or made worse by it. Urticaria pigmentosa rarely itches. As Dr. Sachs brought out, mast cells may be present in mycosis fungoides. Has anyone present seen a case of urticaria pigmentosa caused by arsenic, or noticed severe itching in urticaria pigmentosa, with thickened plaques on the forearm?

DR. FRANK E. CORMIA: It is possible that in the adult type of this disease a latent irritability of the skin may have existed for years. The reaction from arsphenamine could subsequently have irritated the skin and produced the clinical manifestations of urticaria pigmentosa.

DR. J. LOWRY MILLER: BAL (2, 3-dimercaptopropanol) generally is not effective in lesions of long standing caused by arsenic. However, I have seen some exceptions to this. We plan to give BAL to this patient. If there is a favorable response it will be of interest, as urticaria pigmentosa was diagnosed in this case by biopsy in 1942, and the lesions have remained relatively the same. Biopsy again confirms this diagnosis.

Radiodermatitis of Chest with Carcinomatous Changes. Presented by DR. EUGENE F. TRAUB.
A Case for Diagnosis (Dermatitis Herpetiformis?). Presented by DR. GEORGE C. ANDREWS.
Granuloma Annulare. Presented by DR. GEORGE C. ANDREWS.
Tuberculid. Presented by DR. A. BENSON CANNON.
A Case for Diagnosis (Nummular Eczema? Mycosis Fungoides?). Presented by DR. GEORGE C. ANDREWS.
Pustular Bacterid. Presented by DR. GEOGRE C. ANDREWS.
A Case for Diagnosis (Mycosis Fungoides?). Presented by DR. GEORGE C. ANDREWS.
Pili Recurvi (Pili Incarnati). Presented by DR. GEORGE C. ANDREWS.
Actinomycosis Cutis. Presented by DR. GEORGE C. ANDREWS.
Acrodermatitis Pustulosa Perstans. Presented by DR. WILBERT SACHS.

NEW ENGLAND DERMATOLOGICAL SOCIETY

Francis M. Thurmon, M.D., *President*

G. Marshall Crawford, M.D., *Secretary*

April 20, 1949

Cheilitis Exfoliativa. Presented by DR. BERNARD APPEL, Lynn, Mass.

V. M., a 22 year old white Italian housewife, is presented with a complaint of sore lips and mouth for two years. The condition originated with cracking and scaling of the lips. The patient discontinued the use of lipstick, but there was no improvement. She subsequently omitted tooth paste, with no result. Food has not been observed to exert any influence. The condition has remained much the same throughout the past two years, with occasional exacerbation and partial remissions.

Examination reveals a moderate degree of scaling and some crust formation limited to the vermilion portion of the lips. The crusts are yellowish, and in some areas there is considerable heaping-up of dried exudate. Removal of this material reveals a surface which is redder than normal and in which small fissures are present. There is also pronounced gingivitis.

Laboratory procedures have included a complete blood count, examination of the urine, serologic tests for syphilis, determinations of basal metabolic rate and blood sedimentation rate, scratch tests and patch tests. All these procedures provided normal observations. Patch tests with the bristles of a nylon toothbrush were made on the patient's buccal mucous membrane; there was no reaction.

DISCUSSION

DR. BERNARD APPEL, Lynn, Mass.: I should appreciate therapeutic suggestions.

DR. GEORGE E. MORRIS, Boston: This patient said the eruption began after she had had penicillin and had taken sulfonamide drugs. I have never seen cheilitis after penicillin therapy but have observed many instances of perianal dermatitis after the administration of penicillin. I thought this condition was probably due to the change in bacterial flora. There is quite a disturbance in metabolism when penicillin and sulfones are given, and possibly one of the vitamins, such as nicotinic acid or other B factors, is not being formed when there is such a change in flora. I should like to suggest that this change might be the cause of her trouble.

DR. FRANCIS P. MCCARTHY, Boston: This patient was four months pregnant when she acquired pneumonia. At that time her lips were perfectly normal. Because of the illness she was given penicillin and sulfonamides. She vomited a good deal as a result of this treatment and acquired the lip condition, which had an acute onset. The condition then became chronic and has persisted ever since. Dr. Messina treated the patient with very small doses of roentgen rays and achieved only moderate results. This is a case of cheilitis exfoliativa, probably secondary to penicillin and sulfonamide therapy.

DR. JACOB H. SWARTZ, Boston: We must be more cautious in blaming antibiotic therapy in this case. Vitamin deficiency or bacterial flora changes have been mentioned. Temporarily there may have been a change, but that was a long time ago and the patient has had time to readjust herself. Cheilitis exfoliativa is caused by various agents, and often the cause is difficult to find. I do not believe we ought to label this condition as a possible result of either sulfonamide or penicillin therapy.

DR. FRANCIS M. THURMON, Boston: It is not an uncommon condition, and I have seen 2 cases clear up with oral multiple vitamin therapy supplemented by massive doses of multiple vitamins given intramuscularly.

Eosinophilic Granuloma of the Skin. Presented by DR. WALTER F. LEVER, Boston.

F. K., a 32 year old white American-born salesman, is presented with a lesion on the left side of the forehead, which has been present for one year. Other lesions have appeared on the right side of the face within the past six months. The original patch has gradually enlarged but has caused no symptoms of any kind. The patient denied having had medication of any variety since he took quinacrine in the South Pacific five years ago.

Examination reveals a purple plaque with a brownish tinge, measuring 1 by 2 cm., on the upper portion of the left side of the forehead. This is a sharply defined lesion with a slightly elevated surface that is free of scaling. No atrophy can be detected. The lesion is soft when palpated. There are several smaller similar lesions on the right side of the forehead and both zygomatic regions. No lesions are to be found elsewhere. There are no palpable lymph nodes. The liver and spleen cannot be palpated.

Roentgenologic examination of the chest revealed normal conditions. The Hinton reaction of the blood was negative. The cholesterol content of the blood was 188 mg. per hundred cubic centimeters. The hemoglobin was 15.4 Gm. The white cells of the blood numbered 11,200 per cubic millimeter. A differential smear of the blood exhibited 70 per cent polymorphonuclear leukocytes, 23 per cent lymphocytes, 5 per cent monocytes and 2 per cent eosinophils. A biopsy specimen has been removed, and the histopathologic observations were as follows:

"The epidermis was of normal thickness, but the rete pegs were absent. In the corium, separated from the epidermis by a narrow band of normal collagen, there was a dense granulomatous infiltrate. The infiltrate nowhere invaded the pilosebaceous appendages but was everywhere separated from them by a narrow band of normal collagen. The infiltrate was composed predominantly of histiocytes and eosinophils, which were present in about equal number. A few lymphocytes, plasma cells and fibroblasts could be recognized. A number of decidedly dilated capillaries were present in the upper part of the corium."

DISCUSSION

DR. FRANCIS P. MCCARTHY, Boston: May I ask whether there were any such lesions described two or three decades ago? Have we overlooked eosinophilic granuloma in the past, and, if we have ovelooked these cases, what have we called them? To me, this is probably the most interesting case I have seen of a papular eruption on the face that microscopically has a very distinctive picture with an eosinophilic or polymorphonuclear type of infiltrate.

DR. JOHN G. DOWNING, Boston: It is interesting to follow the evolution of this group of cases through the past fifty years. If you look back far enough, you will find the disease described by Hutchinson (*Arch. Surg.*, Oct. 1898) as "Mortimer's Malady," occurring in a man who showed darkish brown lesions on the face. Later, Crocker ("Diseases of the Skin," ed. 3, Philadelphia, P. Blakiston's Son & Co., 1903) presented the same man, added 2 cases to the literature and described the disease as erythema elevatum diutinum. Still later, Boeck (*J. Cutan. & Genito-Urin. Dis.* **17**:543-550 [Dec.] 1899) stated that he thought the same patient had sarcoid. We had the pleasure of seeing the original pictures and pictures of this man after the condition had been cured. I presume many of those lesions were the same as those in the case we are seeing now. I recall a patient in my office who had a lesion which was excised by a surgeon; the histopathologic diagnosis was "chronic granuloma." The patient reported to me later when her lesion began to enlarge and involved most of the nose. I applied radium, and the lesion disappeared with one treatment consisting of an erythema dose. Two other lesions appeared on the forehead, and a biopsy showed chronic granuloma. Later, I saw another similar patient. We did not recognize these cases as eosinophilic granuloma because of failure to recognize the pathologic picture. The most interesting case belonging to this group was that of a man with a sabre-like patch of xanthoma on the scalp. He also had dark brownish lesions on his arms and cerebral changes with loss of the sense of smell. Roentgenologic study revealed eosinophilic granuloma of the bone, and a biopsy of the femur, following fracture, confirmed this diagnosis.

DR. C. GUY LANE, Boston: I can remember only 1 case of this disease—possibly 2—in the past, which passed clinically at first as sarcoid. The color was so striking in today's case that as I looked at it I amazed myself by having a thought of eosinophilic granuloma even before looking at the patient's chart. My

second choice was sarcoid. The striking thing to me, after having seen the other case, was the lack of infiltration; how smooth and even and noninfiltrated were some of these smaller papules. There was very little infiltration, except for one lesion on the forehead. In the earlier case, the lesions appeared as definite small nodules with a brownish tinge similar to this one. If you carry away with you the memory of this particular color, it will be a great deal of help in the future.

DR. ALFRED HOLLANDER, Springfield, Mass.: At a meeting of the Academy of Dermatology and Syphilology in 1946, after a round table conference on histopathology which included eosinophilic granuloma, the late Dr. Felix Pinkus discussed this disease with me. He recalled several cases we had seen together which had been presented as sarcoid or erythema elevatum diutinum. Don't you think we were just lax and accepted a diagnosis of erythema elevatum diutinum or of sarcoid without doing further studies and making a biopsy? After the picture of a new disease is described for the first time, identical observations are promptly reported, and this situation seems to have existed always in all fields of medicine.

DR. JACOB H. SWARTZ, Boston: I don't think we have yet solved the problem of eosinophilic granuloma. Weidman and others have expressed the belief that it is just a pathologic observation in a variety of well known diseases in which typical manifestations are obscured by the eosinophilic infiltrate (ARCH. DERMAT. & SYPH. **55**:155-175 [Feb.] 1947; *J. Invest. Dermat.* **7**:291-300 [Dec.] 1946).

DR. NEVILLE KIRSCH, Hartford, Conn.: It has been reported that trichophytin extract produced a flare-up of all the lesions of eosinophilic granuloma. In addition, lesions came at sites of needle punctures and the histologic section showed eosinophilic granuloma (Lewis, G., and Cormia, F.: ARCH. DERMAT. & SYPH. **55**:176-193 [Feb.] 1947).

DR. WALTER F. LEVER, Boston: The first author to describe this disease was Hutchinson (*Brit. J. Dermat.* **1**:10, 1888-1889). He called it "symmetrical purple congestion of the skin in patches, with induration," which is an apt, although rather long, name for this disease. I do not think that we are justified in relating the type of eosinophilic granuloma of the skin which this patient shows to eosinophilic granuloma of the bone. I thought so at the time I reported my first case (Lever, W. F.: ARCH. DERMAT. & SYPH. **55**:194, 1947). In that case, there were several groups of foam cells; however, in 4 subsequent cases which I have since seen no foam cells were present, and in none of the cases were there lesions of the bones.

It is true that cases of eosinophilic granuloma of the bone occur in which there are cutaneous lesions, but in these cases the cutaneous lesions are different clinically as well as histologically. Such cases have been reported by Curtis and Cawley (ARCH. DERMAT. & SYPH. **55**:810, 1947) and by McCreary (ARCH. DERMAT. & SYPH. **58**:372, 1948).

Thus we have to distinguish strictly between true eosinophilic granuloma of the skin which occurs with bone lesions and represents a variant or attenuated form of the Hand-Schüller-Christian disease, and eosinophilic granuloma of the skin of the erythema elevatum diutinum type, of which the presented case is an example. In the latter type the lesions seem to be present always on the face. In only 1 reported case were lesions present, in addition, on the back (Lever, Lane, Downing and Spangler: ARCH. DERMAT. & SYPH. **58**:430, 1948). The histologic picture in this type of eosinophilic granuloma of the skin is diagnostic and cannot be confused with that of any other disease.

I should like to say a word in regard to Weidman's classification of eosinophilic granuloma (ARCH. DERMAT. & SYPH. **55**:155, 1947). Weidman put into his classification all types of lesions showing, on histologic examination, a granulomatous infiltrate with a large number of eosinophils. The cases compiled in this classification thus represent a heterogeneous group and not an entity and should not be confused with the two types of eosinophilic granuloma of the skin just mentioned.

Pemphigus Vegetans: Remission After Treatment with Aureomycin. Presented by DR. WALTER F. LEVER, Boston.

Eight days after cessation of treatment the lesions became pustular and painful again, and they have since extended quite rapidly.

DISCUSSION

DR. JACOB H. SWARTZ, Boston: I want to quote my experience with 1 case in which aureomycin has been used. In a fulminating case of pemphigus vegetans treated by Dr. Glichlich and me the ultimate result was the same as usual. Aureomycin merely controlled secondary infection and prolonged the agony. I saw today's patient when treatment with aureomycin had just been started, and my impression clinically is that the condition is no better now. If anything, there are more extensive lesions. I don't think we ought to consider this disorder improved by aureomycin. Furthermore, I do not believe this case is the type which one can use for evaluating the efficiency of aureomycin in pemphigus.

DR. G. MARSHALL CRAWFORD, Brookline, Mass.: I can add 2 cases with slightly more encouraging results. One is of the benign familial type of pemphigus of about twenty years' duration. In the past year the patient has had her worst attack and failed to respond to innumerable medications. After five days' treatment with aureomycin—and I am sure she vomited 50 per cent of her 4 Gm. dose per day—her skin was entirely clear. The clinical features of this case in the past six months had come to resemble pemphigus vegetans more than the benign familial type of pemphigus. The second patient was an 11 year old girl with the picture we have often seen, which vacillates between pemphigus and dermatitis herpetiformis and the bullous variety of erythema multiforme and concerning which from week to week we argue which diagnosis is correct. In this instance the predominant lesions favored pemphigus. The administration of 2 Gm. per day of aureomycin ended the formation of new bullae in seven days. A dose of 1 Gm. a day for two additional weeks was followed by the development of occasional small vesicles, rather than numerous bullae such as were characteristic of the earlier behavior of the condition. This situation obviously does not represent a "cure."

DR. BERNARD APPEL, Lynn, Mass.: Whether chronic benign familial pemphigus is really pemphigus in the form that this patient has it is important, because of the probable effectiveness of treatment with aureomycin. I can add one experience with dramatic results equal to those just described by Dr. Crawford. A woman in her early fifties who had all the classic features of the disease, including a history of similar lesions in other members of the family, for the first time in any of her attacks has had a complete, abrupt and almost immediate remission following the use of aureomycin for a period of two days.

DR. ALFRED HOLLANDER, Springfield, Mass.: I can give my experience with aureomycin treatment in 1 case of pemphigus vulgaris, although I do not want

to make any statement as to its final effectiveness. I refer to a case of severe, generalized, typical pemphigus vulgaris, which started in August 1948 with lesions of the mouth. In January 1949 the patient acquired bullae all over the body. I hospitalized her and administered suramin sodium, vitamin D and arsenic in the form of potassium arsenite (Fowler's) solution. There was no response, and the patient's condition was becoming definitely worse. She was started about five weeks ago on treatment with aureomycin, 1 capsule (250 mg.) every two hours. In about four or five days most of the bullae started to dry up; the denuded areas began to epithelize; no new bullae developed and blood chemistry was normal. As soon as the two hour dosage interval was lengthened to three or four hours, the patient acquired about four or five new bullae. For the last eight days she has been kept on a two hour schedule. She is still acquiring occasional bullae but feels fairly well. This condition is not cured, but at least this patient has definitely been benefited for the present by the use of aureomycin. I feel that she would have a relapse if the administration of aureomycin were discontinued. She complained of nausea, and three days ago I changed from aureomycin to chloramphenicol (chloromycetin®), just to find out whether chloramphenicol had the same effect. The patient does not have nausea with this drug.

DR. G. MARSHALL CRAWFORD, Brookline, Mass.: At one New York hospital pemphigus vulgaris is being treated with intravenously adminstered aureomycin (Costello, M. J.: Personal communication). Of 13 cases of acute pemphigus vulgaris 1 has been arrested with dramatic effect. The patient was practically at the point of death when the drug was administered. The others have not done as well.

DR. NEVILLE KIRSCH, Hartford, Conn.: I want to add the report of a case of pemphigus vegetans treated at the Bellevue Hospital with aureomycin. The patient was a 58 year old Italian, who had lost 30 pounds (14 Kg.). He had extensive mouth erosions, and the bullae in both axillas were eroded; the groin was severely involved, as was the scrotum. Previous histopathologic study had confirmed the diagnosis. The white cell count was about 20,000; the temperature was elevated, and the man was practically moribund. Under treatment with aureomycin he had a great deal of improvement and was discharged back to Hartford for follow-up. He was in Hartford Hospital about a month. He had treatment for a few weeks and began to show recurrences in the groins. His mouth had just a few bullae, and his axillas were completely cleared, except for pronounced brown hyperpigmentation. The groin started to show bullae and vegetating lesions, and we resumed aureomycin therapy with doses suggested by Bellevue staff members.

DR. WALTER F. LEVER, Boston: I have had the opportunity of treating with aureomycin 4 patients having pemphigus of the malignant variety. I hesitate to draw definite conclusions, but I should say that aureomycin is more effective than any other drug in controlling the secondary infection of the skin and, in this way, promotes healing, sometimes to quite a remarkable extent. Somehow, it seems also to prevent the breaking-out of new lesions but only for the time that it is being given. When it is withdrawn, new lesions tend to appear. Nevertheless, I have an optimism about aureomycin that I have about no other drug, and I think that until a better one comes along it is the best that we have at present for the treatment of pemphigus.

Nodular Late Syphilis of Angle of Mouth. Presented by DR. SIDNEY J. ALLMAN, Boston.
A Case for Diagnosis (Pompholyx?). Presented by DR. BERNARD APPEL, Lynn, Mass.
Necrobiosis Lipoidica Diabeticorum. Presented by DR. SEYMOUR J. WHITE, Lawrence, Mass.
Dermatitis Factitia. Presented by DR. PAUL J. CATINELLA, Boston.

Lichen Planopilaris. Presented by DR. S. J. ALLMAN, Boston.
Pachyonychia Congenita (Leukokeratosis Oris). Presented by DR. G. MARSHALL CRAWFORD, Brookline, Mass.
Fox-Fordyce Disease. Presented by DR. BERNARD APPEL, Lynn, Mass.
Sarcoidosis of the Skin; Lupus Tumidus of the Chin. Presented by DR. LEO KORETSKY, West Medford, Mass.
Sarcoidosis of the Skin. Presented by DR. WALTER F. LEVER and DR. S. SPANGLER, Boston.
Mycosis Fungoides. Presented by DR. F. M. THURMON, Boston.
Disseminated Lupus Erythematosus (Chronic) with Palmar Lesions. Presented by DR. JOHN G. DOWNING, Boston.
Pemphigus Vulgaris. Presented by DR. GEORGE SCHWARTZ, Malden, Mass.
Perifolliculitis Capitis Abscedens et Suffodiens. Presented by DR. S. J. MESSINA, Boston.
Erythrasma. Presented by S. J. MESSINA, Boston.

BRONX DERMATOLOGICAL SOCIETY

Charles Wolf, M.D., *President*

Henry Silver, M.D., *Secretary*

April 21, 1949

Localized Hyperhidrosis of the Forehead. Presentd by DR. JOHN GARB.

R. M., a woman aged 18, registered at the Skin and Cancer Unit of the New York University–Bellevue Medical Center on March 29, 1949, complaining of excessive sweating on the forehead. The sweating is followed by deposits of salt which form into crusts under the eyebrows. After a sunburn the sweating ceases completely for two days. There is no history of a similar disorder in the family. The past history reveals that the patient had measles, whooping cough, scarlet fever and a mastoid operation in childhood.

This disorder dates back to the time since birth following forceps delivery which injured the right side of the forehead and eye. The right eye became swollen and could not be opened for about two months and for three years following could be opened only half way.

On the right side of the forehead there is an ill defined, rounded superficial erythematous patch, 2 inches (5 cm.) in diameter, moist and somewhat edematous. It is roughened to the touch, showing macules and maculopapules the size of a pinhead or match head. The texture of the skin in the affected area appears normal. The hands and feet do not show abnormalities of sweating. The pharyngeal and conjunctival reflexes are normal.

Endocrine examination showed evidence of hypopituitarism as revealed by late onset of menstruation and irregular menses, hypertrichosis of the chin, male distribution of pubic hair, long legs and other disturbances referable to glandular dyscrasia.

The Wassermann reaction of the blood was negative. Examination of the urine and the hemogram showed no abnormalities.

Five drops of tincture of belladonna, given three times daily, controlled the sweating effectively.

DISCUSSION

DR. PAUL GROSS: In addition to localized sweating, this patient has small reddish papules which resemble in clinical appearance those of granulosis rubra nasi. I doubt that birth trauma is responsible for this picture.

DR. FRANZ HERRMANN: A case of "unilateral hyperhidrosis" almost identical with the presented picture was described by Tarlov and Herz (*J. A. M. A.* **133:** 476, 1947). The condition was successfully treated by dissection of the supra-

orbital nerve in the eyebrow area of the same side. The older conception was confirmed that the autonomic fibers responsible for the (cholinergic) sudomotor innervation of the forehead originate in the superior cervical ganglion and join the trigeminal branch just before its point of exit through the skull. Damage of these autonomic fibers at a deeper site may likewise result in unilateral disturbances of sweating on the forehead; e. g., anhidrosis may occur after pathologic processes in the parotid gland or after mastoid operations.

DR. WILLIAM LEIFER: I noted that the patient has a narrowing of the right pupil with enophthalmos on that side and a narrow palpebral fissure.

DR. MARTIN V. BOARDMAN: While it is of dermatologic interest, we are here dealing with a purely neurologic condition—a neurologic parodox, to be exact—resulting from a birth injury. The girl has a typical Horner's syndrome with enophthalmos due to paralysis of Mueller's retro-orbital muscle, ptosis due to paralysis of the superior tarsal muscle and myosis due to paralysis of the dilator fibers of the iris. In addition, there is a lesser known but nevertheless integral part of the syndrome present, namely, depigmentation of the iris. Usually in Horner's syndrome which results from injury or disease involving the cervical sympathetic trunk there is an accompanying loss of sweat gland function. In the case presented there is a hyperhidrosis of the supraorbital area of the involved side, and hyperhidrosis is a parasympathomimetic function. Thus there is, I believe, rather than a sympathetic paralysis, a pronounced parasympathetic stimulation.

Osteoma Cutis. Presented by DR. MORRIS LEIDER.

B. F., aged 33, a clerical worker, had severe acne vulgaris for twelve years, from the age of 14 to 26.

Treatment from inception to date consisted of 20 roentgen ray exposures, 75 r each, in two courses of 12 and 8 exposures, about eighteen months apart, when the acne was of about four years' duration. Topical medication consisted of white lotion, sulfurated lime (Vleminckx's) solution and sulfur and resorcinol preparations. In addition the patient received vaccines, ultraviolet radiation and cryotherapy.

It is notable that this patient never was a "picker." She never traumatized the skin by wilful or unconscious pressing, squeezing or scratching. Psychologically this patient is exceedingly stable.

Physical examination at this time revealed nothing more than diffuse scarring as an evidence of old acne activity. There is an occasional comedo but no milia. Nothing suggestive of intracutaneous or subcutaneous concretions can be felt by palpation. There is an incidental chloasma.

Roentgenograms of the skin of the chin, taken on the remote possibility that something abnormal might be revealed, showed multiple calcific shadows scattered throughout the area given roentgen examination.

DISCUSSION

DR. EMANUEL MUSKATBLIT: My impression is that the photographs show what may possibly be calcification of comedos in the canals of sebaceous glands and not so much osteoma cutis.

DR. FRANK E. CROSS: Has Dr. Leider taken roentgenograms in similar cases, and, if so, in what percentage of cases has he found osteoma cutis?

DR. DAVID BLOOM: What is the explanation for formation of bone tissue in acne vulgaris?

DR. MORRIS LEIDER: In answer to Dr. Cross, I have now observed 3 cases of this type in the past year. There is this one, the one I reported recently (ARCH. DERMAT. & SYPH. **58**: 168, 1948) and a third of lesser proportions. The first 2 cases are remarkable for the large number of osteomas demonstrated by roentgen ray visualization. In the published case I was able to show by histologic section as many as six osteomas in 1 linear centimeter of tissue.

In answer to Dr. Muskatblit, these concretions are bone and not merely calcium. Many colleagues to whom I have shown these patients find it hard to accept the fact that these amazing structures are true bone and not just calcific deposits. They tend toward a diagnosis of cutaneous calculi but shy from osteoma cutis. But the bony nature of the spherules has been proved by both microscopic and microchemical analysis. Histologically they contain osteoblasts in an orderly arrangement, and chemically they contain protein in addition to calcium and phosphates. I have a suspicion that some of the cases described as cutaneous calculi were really cases of osteoma cutis wherein the nature of the concretions was not studied and analyzed completely. However that may be, calculi are said to occur in milia. In these cases there are no milia and the process can be seen in the midcutis not related positionally or otherwise to sebaceous glands or hair follicules.

With respect to pathogenesis, if one recalls the ossifying myositis of the inner thigh muscles of horse riders and the bony plates that sometimes occur in the shoulder muscles of hod carriers, one may conclude that chronic trauma of striated muscle conduces to ossification. In all the cases of facial osteoma cutis that I have seen there has been a history—and indeed clinical evidence—of long-standing severe acne vulgaris. It is not difficult to imagine that severe acne with its chronic inflammation, with the picking, squeezing and pressing that most patients practice, can be a proximate cause of ossification of the tiny muscle elements that exist so abundantly in the skin of the face. I offer it as a good possibility that osteoma cutis of the face is, in mild degrees at least, a common complication of long-standing acne.

Herpes Gestationis (Post Partum). Presented by DR. HENRY SILVER.

V. C., aged 27, a mother of 2 children, presents an eruption of two years' duration. During the entire second pregnancy she suffered frequently from nausea and vomiting. The delivery of the child was normal, but the placenta was found adherent and had to be removed in sections. Three months later a fairly generalized eruption appeared. The itching was intense and sleep disturbed. The first attack lasted about eight months without remission. The patient was treated by several dermatologists with ultraviolet radiation, internal and local medication and injections, without benefit. Subsequently she frequented the Skin and Cancer Clinic. Since the onset, the eruption has improved twice for a period of about two weeks followed by the appearance of new crops of lesions.

Since the birth of the second child, the menstrual periods have been irregular and painful, occurring every two weeks with prolonged periods of bleeding.

Examination revealed a vesicular, bullous and crusted eruption involving the forehead, sides of the face, the entire neck, the upper part of the back including the shoulder girdle, the upper part of the chest and axillary folds, the backs of the forearms, the elbows, the wrists, the lower aspects of the thighs, the knees and the dorsa of the feet. The lesions were grouped and showed a predilection for the upper part of the body. Pitting and pigmentation were present at the sites of previously healed lesions.

The patient was first seen by me on April 4, 1949. She was put on treatment with sulfapyridine, 2 Gm. daily, and immediately referred to a gynecologist for curettage, which was performed on April 9, 1949. Laboratory observations were essentially normal.

Now, ten days later, the subjective symptoms have completely disappeared and the eruption has practically cleared.

DISCUSSION

DR. FRANK E. CROSS: There are cases of dermatitis herpetiformis which appear post partum. The interesting feature in this case is that the condition appeared so long afterward. The question now arises whether the pregnancy is in any way related to the eruption. On the other hand, because Duhring's disease is not infrequent, these cutaneous eruptions may be independent of the pregnancy.

DR. HENRY SILVER: Dr. Cross stressed the points of interest in this case. The clinical picture of herpes gestationis is characteristic; it is dermatitis herpetiformis. The cases that occur during pregnancy and disappear immediately afterward are easily recognizable. The postpartum cases present difficulties. This case is probably one of the few recorded of that sort. The eruption appeared three months after delivery. The patient had a troublesome pregnancy and difficult delivery of the placenta. When the patient began to menstruate again the cycles were extremely irregular, with prolonged bleeding and severe pain. Because of the dysmenorrhea I advised an operation, which was performed two week ago. There was dramatic improvement following curettage. The subjective symptoms immediately disappeared and the eruption practically cleared. The improvement cannot be ascribed to sulfapyridine, which the patient had taken previously on several occasions and to which she failed to show any response in the first week under my care.

Lymphangioma of the Scrotum. Presented by DR. CHARLES R. REIN and (by invitation) DR. GEORGE H. KOSTANT.

Lymphangioma of the Scrotum. Presented by DR. CHARLES R. REIN and (by invitation) DR. GEORGE H. KOSTANT.

DISCUSSION OF CASES OF LYMPHANGIOMA

DR. DAVID BLOOM: I should like to suggest injections of hyaluronidase into the lesions.

DR. GEORGE H. KOSTANT (by invitation): These patients were presented primarily for therapeutic suggestions. In the younger patient, this condition presents a serious problem because of the lymphorrhea and recurrent attacks of cellulitis with resultant hypertrophy of the skin. On rupture of the vesicles drainage may persist for as long as two to three weeks. In this patient it may be interesting to conjecture as to the pathogenesis of the eruption. He was operated on for a "cyst" in the left upper portion of the scrotum four years prior to the onset of the eruption. Unfortunately we do not know the pathologic changes observed in the tissue removed. This could possibly have been lymphangiomatous tissue. It is also possible that whatever operative procedure was performed may have resulted in fibrosis, with secondary obstruction to the lymphatic drainage of the scrotum. In this event we might really be dealing with lymphangiectases rather than lymphangioma. The older patient presents no problem, inasmuch as the eruption has been present for many years without resulting in any discomfort whatsoever.

Acropigmentation in a Child. Presented by DR. DAVID BLOOM.

R. D., a boy aged 4, was registered at the Skin and Cancer Clinic of the New York University Post-Graduate Medical School on Nov. 3, 1949, for an eruption on the forearms which was diagnosed as eczema and lesions on the hands which were considered verruca plana.

On examination it was found that the child had a peculiar pigmentation on the extremities. The dorsal aspect of the distal phalanges of all the fingers shows an ill defined dark brown discoloration. The distal phalanges of most of the toes show a similar but less intensive hyperpigmentation. On the elbows and knees there is a plaque of slight hyperpigmentation. On the trunk there are several large and small café au lait spots, oval and irregular in shape.

This hyperpigmentation was noticed by the mother when the boy was 5 months old, and it had increased since then gradually in intensity. Several members of the family are said to have a small hyperpigmented nevus on the trunk.

The child has a dark complexion. He shows, in addition to the aforementioned hyperpigmentation, hypertrichosis on the trunk.

DISCUSSION

DR. DAVID BLOOM: The name acropigmentation refers to the pigmentation of the distal phalanges of the fingers and toes. The term has been given by Thomas, who was the first to describe it (*München. med. Wchnschr.* **70**:1102, 1923). Although he stated that he found this condition in half of the investigated infants, such cases must be rare. This contention is proved also by the fact that Meirowsky ("Handbuch der Haut- und Geschlechtskrankheiten") showed a photograph of this condition which he had received from the collection of Thomas' cases. Thomas stated that in the second year of life this hyperpigmentation becomes more intensive and diminishes gradually in intensity from about the fifth year. It is to be considered a nevoid condition. The child presented has, in addition, a number of café au lait spots on the trunk which seems to be pigmented nevi. Thomas described this condition with Delhougne in 1924 (*Deutsche med. Wchnschr.* **50**:1479, 1924) under the title "Spitzenpigment."

Epithelioma in a Boy Aged 14 Years. Abortive Xeroderma Pigmentosum? Presented by DR. LOUIS CHARGIN.

J. R., aged 14 years, has had lentigines since early childhood covering the face, neck and the trunk to the belly line. Six months ago there developed a small nodule on the right cheek which has slightly increase in the course of time to the size of a small pea and has recently ulcerated in the center. Clinically the lesion suggests a basal cell epithelioma.

In 1945 I excised a similar lesion from the left cheek of the patient's sister, then 20 years old, which was reported on histologic examination as infiltrating basal cell epithelioma en masse. Neither of the parents show freckling of any type.

Urticaria Caused by Multiple Agents (Sunlight, Wavelength 4,000 to 5,000 Angstrom Units; Mechanical Pressure; Sulfonamide, and Iodoalphionic Acid). Presented by DR. MAURICE UMANSKY.

A Case for Diagnosis (Morphea?): Thickened Patch on Neck in a Boy Aged 9. Presented by DR. JOHN GARB and DR. CHARLES F. SIMS.

A Case for Diagnosis (Tuberculosis Cutis? Leprosy?) in a 14 Year Old Puerto Rican Girl. Presented by DR. MARTIN V. BOARDMAN.

Calcinosis Cutis, Scleroderma and Diabetes. Presented by DR. DAVID BLOOM.

Asymptomatic Lichen Sclerosus et Atrophicus of the Vulva. Presented by DR. NATHAN SOBEL.

Localized Argyria. Presented by DR. CHARLES R. REIN.

Parapsoriasis Guttata in a Boy Aged 6 Years. Presented by DR. NATHAN SOBEL.

Livedo Reticularis. Presented by DR. JOHN GARB.

Tinea Capitis with Infection of the Eyelashes. Presented by DR. ANDREW G. FRANKS.

Book Reviews

Histopathology of the Skin. By Walter F. Lever, M.D. Price, $10. Pp. 449, with 221 illustrations and 4 color plates. J. B. Lippincott Company, 227-231 South 6th St., Philadelphia 5, 1949.

This short book on dermatologic histopathology is written primarily for the dermatologist, and yet the general pathologist will also find it most useful. The author gives more space to the cutaneous diseases in which the histologic examination is of diagnostic value than to those in which the histologic picture is not particularly characteristic. The discussion of each disease is preceded by a short description of the clinical features. The discussion of the histologic picture is short and precise and therefore very excellent and is aided by good photomicrographs. Wherever necessary the differential diagnosis is given.

Epidermal and mesodermal tumors are also considered. This book falls short only by omitting the rarer aberrations from and variations of the typical histologic picture.

An extensive bibliography, which will be most helpful to those who are interested in obtaining additional information is given.

This book is highly recommended to students of dermatology, the practicing dermatologist and the general pathologist.

CORRECTION

The address of Dr. Harold C. Fishman, secretary of the Metropolitan Dermatological Society of Los Angeles, is 105 North San Vicente Boulevard, Beverly Hills, and not 105 North Vincente Boulevard, Beverly Hills, as was stated on page 179 in the July 1950 issue of the ARCHIVES.

BOOK